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## **End of Term Evaluation**

**World Relief Mozambique's  
Agricultural and Well Maintenance Programme Gaza Province.**

**August 1997.**

**By  
K. McKemey MA. Ph.D.  
J. Nghatsane M.Sc.**

**Pertaining to USAID Grant No.: 656-0217-G-SS-3003-00, Modification No.: 04**

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## 2. Executive Summary

This document represents the end of project evaluation of the USAID Grant No: 656-0217-G SS-3003-00, Modification No.: 04 Implemented by World Relief Mozambique. The duration of this modification was from The 1<sup>st</sup> of October 1995 to the 30<sup>th</sup> of September 1997. The programme addresses the issues of food and water security within the and north and western sectors of Gaza province, Mozambique. The programme has been active since 1992 and the specific purpose of this modification and extension to the grant is to improve the income and food security of targeted areas in Chicualacuala, Mabalane, Guija, Chigubo and Massangena. This will be facilitated by stimulating the formation of community producer groups that will collaborate on agricultural production and marketing activities and thus enable a more diversified local farm economy to develop. To also ensure continued access to quality water in villages where wells were dug. WRC expects to achieve this through continued training and monitoring of the 163 boreholes completed to date.

The main activity areas addressed are

- The development and maintenance of an agricultural extension service involving leader-farmer and producer group development
- Livestock improvement and multiplication. The principal multiplication strategy was the development village centres for this purpose and the distribution of this stock into the communities. The improvement strategy was to provide education and veterinary services such as poultry vaccinations against Newcastle Disease and major cause of poultry mortality within the area.
- Crop diversification and improvement focusing particularly on the promotion and local multiplication of appropriate crops for the area, the stimulation of fruit tree nurseries and training in the management of pests in both standing and harvested crops.
- The maintenance of the wells and the pumps established through the earlier applications of this grant. The main method being to support a team of two technicians in this activity.

The programme has achieved most of the expected outcomes set in the current grant amendment and through its activity as made a significant contribution to the food security and economy of many rural households with the targeted area.

Although the specific objectives regarding direct beneficiary involvement in the livestock distribution project fell below the objective set for the livestock multiplication centres, the group extension model adopted and the education and services provided proved very effective. The approach taken has also proved reasonably cost effective.

However, tight control over expenditure and the limitations of World Relief to meet the expected match at periods during the life of the grant have led to a failure to maximise the full extent of this grant provision. A summary of the financial status is presented in Appendix J. This demonstrates that the expected expenditure against the full modified grant will be approximately 90% by September 1997. The programme management has been successful in attracting other in-kind and financial support for complimentary inputs from such institutions as the UNHCR and WPF.

The impact of the extension training and services has led to a significant overall improvement and growth of the small livestock population and to a lesser degree improvements in local crop husbandry practices. However, WR has also continued to provide a free distribution structure for cereal and vegetable seeds, which it is considered tend to conflict with and limit the more developmental approach promoted through the objectives set in the current amendment regarding cost recovery for seed distribution and multiplication.

The three areas of most significant impact are:

- the introduction and/or redistribution of root crops, cassava and sweet potato;
- the provision of livestock extension services, particularly the provision of regular Newcastle vaccinations for poultry;
- the well maintenance programme

Only one of these three which could be considered sustainable is the multiplication and redistribution of root crops. This is considered to have had the single most important impact on sustainable food security of WR's various initiatives in Northern Gaza. The impressive improvement in small livestock is dependent in particular on the continued provision of a regular access to Newcastle vaccine. The water or well maintenance service has maintained a water structure that would have probably collapsed over the past year and still remains heavily dependent on a similar on going service structure to maintain it into the future. These last two services presently are locally non sustainable. However, on these two services much of the human and animal welfare of this northern region now depend.

The conclusion is that WR should attempt to maintain these two services for a year given the current failure to identify an alternative structure/s capable undertaking these roles. If they are left unattended much of the current achievements in both human and livestock health will be put at risk. These are seen to be simple but critical continuing needs. This pressure on WR to continue for a limited period is in part due to the failure to develop or identify appropriate local institution/s to work with or through. If WR continues in a limited capacity in these roles the primary objective must be the development of local linkages and the identification of local counterparts.

### 3. Programme Background

World Relief Corporation (WRC) implemented the Agricultural Recovery and Development Project in the following Districts of the Northern Gaza Province of Mozambique: Guija, Mabalane, Chicualacuala, Massangena and to a lesser extent Chigubo.

The project is a fourth amendment to the USAID grant 656-0217-G-SS-3003.

The activities of the original grant began in October 1992 and was in response to the emergency appeals by the Mozambican Government to address drought related crisis which affected harvests and portable water. The strategy used was that of provision of seed and tool packs in order to stimulate the recovery of agricultural production of drought affected families thus facilitate the transition from dependence on food aid to self reliance. Provision of wells was also carried

The period of this grant extends from 1 October 1995 to 30 September 1997

In addressing the problem of food security in the light of erratic rainfall, the project recognizes the traditional importance of rural household economies.

### 4. Terms and presentation of findings

The evaluation addresses the terms of reference which are located in Appendix B. These terms request an end of project status evaluation which will assess the accomplishments and management of the programme in the light of the objectives and expected outcomes detailed in the USAID Grant No: 656-0217-G SS-3003-00, Modification No.: 04.

The findings are presented following the main activity areas and their specific objectives as outlined in the grant modification No. 4. The issue of accessing alternative funding will be addressed in a separate document along with a more detailed discussion regarding future options and possible strategies.

### 5. Methodology

The main method used is that of Rapid Rural Appraisal incorporating a participative element into the process.

This was accomplished by field visits, interviews and review of available secondary data such as project reports and the grant agreement and current administrative information. For a list of materials consulted see Appendix H.

The field visits took place from 5 - 7 August 1997 during which 8 communities were visited and group interviews were conducted with beneficiaries as well as open interviews with Extensionists and other key informants such as the District Directors of Agriculture, Veterinary Officer and village leaders.

Other WRC staff and the management were interviewed at the Chokwe office on 8 August

The responses of both community groups and extensionists was analyzed by observing frequencies and ranking

The schedule for the visits and the interviews are in Appendix D

The synthesis of the available data and the writing of the evaluation report took place on 8 - 14 August. The monthly reports of the Project Manager as well as the baseline survey and the end-of-project status survey were used to facilitate the measurement of the impact of the project. This was done by comparison of the baseline findings with those of the end-of-project survey

The surveys were conducted by WRC Agricultural Extensionists at the villages where their main operational activities are based. These villages are those where the Extensionists are stationed as well as adjacent ones

Appendix C. shows the total households and sampling for both the Baseline and End-of-project Surveys. The sampling was randomized within the different communities. An attempt was made to sample 10% of all households in each community.

The questionnaire was written in Portuguese for the Extensionists but it was administered in Shangaan.

The presentation of the survey results is such that the villages under one Extensionist were treated as an entity, i.e. presented as an aggregate. The tables in appendix E therefore present the data in these groupings.

## 6. Achievements and Recommendations

### 6.1 Aims and Objectives

This evaluation addresses the aims and objectives detailed in the USAID Grant No.: 656-0217-G-SS-3003-00, Modification No.: 04. Attachment B. The purpose is:

"...to improve the income and food security of targeted areas in Chicualacuala, Mabalane, Guija, Chigubo and Massangena. This will be facilitated by stimulating the formation of community producer groups that will collaborate on agricultural production and marketing activities and thus enable a more diversified local farm economy to develop. ....also ensure continued access to quality water in villages where wells were dug ... WRC expects to achieve this through continued training and monitoring of the 163 boreholes completed to date (USAID Grant No. 656-0217-G-SS-3003-00, Modification No. 04, 1996)

The expanded activities are divided into four main areas

#### 1. Community based agricultural extension:

- the facilitation of 120 village-level producer associations to assist 11,000 disadvantaged rural households in establishing nuclei of breeding stock and improved animal husbandry;
- the establishment of a team of 8 village based agricultural technicians to assist the implementation of agricultural activity in areas not assisted by government personnel;
- producer associations established and/or formalised within each of the target communities, each with their respected leader-farmers -200- to facilitate the implementation of programme activities;
- women to form the dominant segment of the beneficiaries and comprise the leadership of activities targeted toward them.

#### 2. Livestock improvement and multiplication:

- to enable the rehabilitation of the livestock populations via the process of encouraging the gradual movement from small livestock restocking such as, e.g. poultry, to larger animals such as goats and eventually cattle;
- construct four and maintain six, community operated, livestock multiplication centres for the multiplication of selected breeds for distribution, genetic improvement of local stock, training in improved husbandry practices and the vaccination of local chicken population against Newcastle Disease;
- to assist 5709 direct beneficiaries and 16,978 indirect beneficiaries through the livestock multiplication centres.

The expected impact of the livestock rehabilitation activities are:

- increased livestock ownership rates amongst beneficiary families, i.e. 15% of goats, 35% of chickens, 40% of ducks and 60% of guinea pigs;

- a 30% increase of meat consumption and or sale or slaughter of each livestock;
- a 200% increase in the population of each livestock species;
- a decrease of stock mortality, i.e. 8% for goats, 20% for chickens, and 2% for ducks;
- a 10% increase in indigenous goat fertility and a 15% increase in the twinning rate.

### 3. Crop Diversification and Improvement:

The general objectives are to promote the production of 350 hectares of improved or alternative crops and train leader-farmers in the production and management of seed or vegetative material to stimulate the continued growing and spread of winter vegetables. The specific objectives are related to following crops

#### Cereal crops.

- promotion of millet and sorghum via the distribution of seed at 150% of cost;
- establish of 25, 10has community blocks, of cereals as a means of demonstrating joint bird control;
- 400 on-farm trials with cereals and pulse crop varieties 200 per year.

#### Root crops:

- train farmers in the multiplication of cassava so promoting the spread of existing plant stocks,
- procure sweet potato stems and distribute at cost,

#### Pulse crops.

- identify, test and acquire short-season cowpea varieties for resale at 150% of cost;
- establish 100has. of short-season varieties over the life of this amendment;
- procure, on-farm test and distribute at cost, Bambara and other improved groundnut varieties.

#### Vegetable crops:

- promote cool season vegetables which yield seed or vegetative matter which can be conserved to reproduce these crops locally, i.e. garlic, shallot, onion, tomato, lettuce and couve;
- train 200 leader farmers in the production and storage of local vegetable seed and planting materials

The stated end of project **expected outcome** of the vegetable crop diversification and improvement element is:



- 15% increase in the production of seed and planting material suitable for cool season production

#### Fruit trees:

- locally grow and sell at cost to selected beneficiaries, 6000 fruit trees, i.e. mango, almond and marula;
- encourage intended beneficiaries to construct stock-proof fencing for the saplings;
- promote local commercial production of fruit tree seedlings,
- establish 5 village nurseries producing local fruit trees.

#### Field and post-harvest losses.

- raise the awareness of losses caused by rats and promote methods for controlling the rat population,
- train via leader-farmers, the target population in traditional pest control methods,
- promote pest resistant varieties

#### 4. Maintenance and Monitoring of Boreholes<sup>1</sup>

- ensure that two technicians monitor and maintain the 163 water pumps previously installed under the grant agreement

## 6.2 Community based agricultural extension:

### 6.2.1 Achievement of Objectives

**Facilitate 120 village-level producer groups focusing on livestock improvement.** In all 194 livestock producer associations/groups now exist (see Appendix E., Table e1). Taken literally this represents 162% achievement of the set objective. However, it should be noted that within most targeted communities six separate producer groups have been established each dealing with a specific livestock species or crop activity. The average membership of these groups is relatively small, 8. The mean for the goat and vegetable groups tends to be higher, 10.

The level of activity of these groups, current membership and level participation, with or without the presence of the WRM extensionist is monitored on a monthly basis (see Appendix G). These reports indicate that the membership of the groups remains reasonable constant and participation is high. However, there still appears to be a continuing almost total dependence on the presence of the extensionist to initiate group activity.

**Assist 11000 households to establish/or improve breeding stock.** The overall membership of the community level interest groups is 2278.<sup>1</sup> (see Appendix E., Table e2). Of this membership, 1387 are members of livestock interest groups. If this

<sup>1</sup> It is stated by staff that only one representative of a household is a member of an interest group

is taken to represent the number of households who have been assisted in the establishment of nuclei of breeding stock and improved animal husbandry it falls well short of the original target of 11000 households, i.e. 13%. It should also be noted that participants can be members of more than one group, although it was mentioned that in this event this does not exceed membership of more than two groups. If this is the case, taking interest group membership to represent the households helped to improve their breeding stock the result could be as low as 6% of the objective. An alternative reading of the achievement regarding this objective can be drawn from the summary of livestock beneficiaries, presented in Appendix E., Table e1. From this table, 1957 households have received breeding stock via the programme. Apart from this many other members of the community, not involved in livestock distribution, have brought their livestock for treatment to the WR livestock centres and most have had their stock, i.e. chickens and goats regularly vaccinated or dosed. If it is assumed that the average number of treatments received per participating household since October 1995 is 3, then an estimated number of livestock beneficiary households is 2287<sup>2</sup> or 21% of original objective. This is possibly a rather generous estimation and the real figure probably lies near to 13%. The main reason for this low achievement lies in the low distribution of animals and therefore the relatively poor performance of the livestock multiplication centres due to inadequate initial stocking. Difficulty was experienced acquiring quality animals. However, from discussion held with community members and staff it appears that most smaller livestock holders within the targeted communities have involved their existing stock within the programme and noted a marked reduction in their stocks mortality rates. It should also be noted that the improved male stock handed out of chickens, goats and ducks, will service the stock of neighbouring households. This indirect effect may influence as many as a further three households.

**Establish a team of 8 village based extensionists.** WRM have maintained and strengthened the agricultural extension structure since October 1995. The agricultural team now consists of 15 extensionists, 13 living in the communities, and two providing logistical support and supervision. The agricultural programme has been directed since December 1996 by Johnson Nghatsane. This represents an appreciably larger extension team than originally envisaged in the current amendment. Although the programme must be complimented for the coverage it has achieved in northern Gaza, this increase in the original team size has created stress, particularly, regarding adequate mobility for the extensionists. This was the most highly ranked problem by the extensionists interviewed. 3 of those interviewed have only received access to the partial use of a motorcycle within the last month. The second most highly ranked problem was the timely provision of supplies, although the servicing of a larger team was taken into account by creating two support positions. Difficulties have been experienced in acquiring certain products that have had to be imported from South Africa. The team appear to be cohesive and receive regular training and supervision as can be noted from a review of the monthly reports. Those interviewed support the claims of these reports. Occasional staff problems have occurred and these instances have led to discipline or dismissal.

**Establish and formalise 200 village level producer associations.** The number of producer associations formed has been discussed above. A total of 294 village producer groups have been formed exist (see Appendix E., Table e2). It is questioned whether these relatively small specialist interest groups represent the original concept of producer associations which the author assumes envisaged to be the formation of village/community representative bodies capable of independent

<sup>2</sup> The number of households receiving animals plus a third of the number of beneficiary treatment referrals made, minus those receiving goats or chickens, is taken as the estimate of the total number of direct households whose livestock have benefited from the programme, i.e.  $1957 + (4660/3) - 1190 = 2287$ . It is assumed that those who received chickens and goats would have been involved in the vaccination and dosing of their livestock.

representation and support of the communities' agriculture needs and interests beyond the presence of WRM

However, the absence of the political dimension within the smaller interest group structure does appear to have facilitated an effective extension education process. The issue of developing effective sustainable independent community level organisation still has to be addressed. This possibly could be achieved through the development of structure involving the leadership of the different interest groups. However, concern is expressed regarding the number of groups already active within a community and the possible negative effect this has on the number of communities an extensionist can cover, and therefore on their efficiency

**Formation of 200 leader-farmers to facilitate extension at the community level.** 122 leader farmers have been identified and trained these have been active in running on farm trials as demonstrated in Appendix E., Table e3. The programme has moved away from the concept of leader-farmers and put more emphasis on the interest groups, their leadership and joint learning and experimentation. Many of the current nominated leader-farmers were identified before the commencement of the current amendment in October 1995. The leader-farmer concept if it had been addressed with more conviction, it may have helped reduce the pressure on the team and expanded their coverage. The results of the interest group strategy regarding community involvement and participation, however, cannot be ignored.

**Women form the dominant segment of the beneficiaries and leadership of female targeted activities** The programme has made a significant effort to insure the achievement of this objective. Almost all reports monitor the gender differentiation regarding beneficiaries. This can be observed from the tables in Appendixes E, F and G., e.g. the summary of livestock beneficiaries (Appendix E., Table e1) demonstrates that women form 76% of all recipients. However, 45% of all livestock referrals for treatment were by men. One interesting observation that is a surprise is the higher than average male participation in the guinea pig distribution, 38%. Many stated that this species was culturally beneath the Shangaan male. The elements of distribution/assistance that pertain to the current amendment appear to have respected approximately a three to one ratio in favour of women.

The exceptions are the distribution of WFP donated cereals (Appendix E., Table e4), 45% women, and the rat proofing of grain storage bins (Appendix G., Table 18), 22% women. The handling of cereal production may be culturally a male preserve.

Most of the interest groups are headed by women.

### 6.2.2 Evaluation

The extension programme, particularly education in livestock and vegetable husbandry was ranked the most highly of all the contributions WRM agricultural programme have made, i.e. it is seen to be more important than the distribution of animals. Agricultural education is clearly highly appreciated and the extensionist team and their approach/method at the village level has gained them the communities and the local government respect and subsequent participation.

The extension structure has continued to provide an effective method of large scale seed distribution as part of a reducing relief/food security intervention. This type of involvement has its draw-backs for a team who are attempting to encourage local propagation of seed and vegetative reproductive materials, and encouraging people to recognise the true cost of these contribution.

The main weakness of the programme to date is that it has failed to create or promote effective community organisation that will be capable of independent representation. It is not felt that the present small multiple interest groups addresses this issue.

The effectiveness and efficiency of the programme have been impeded to some extent by lack of adequate transportation for some of the extensionists, however, this is not considered to have had a marked negative impact on the programme. In fact it may have helped develop the close links between the extensionists and their communities, i.e. they have been forced to remain within the villages. The most serious issues which effected the implementation of the programme and its effectiveness are:

- the late signing of the amendment, i.e. signed at the end of December 1995 but with effect from October 1995, which led to a three month delay in initiating essential purchases and general draw-down;
- the purchase of imported products which given the nature of the process led to delays in certain instances.

The sustainability of the current extension structure is very fragile given the lack of contingency planning for this programme's continuance on the part of WR just six weeks before the lose of the present grant agreement. The WR extension team are basically providing the veterinary extension/control structure for the government regarding the care of the chickens and goat population in the northern Gaza region. The agriculture district government personnel indicated that they are still not in a position to assume responsibility for such services, e.g. vaccinations against Newcastle Disease in poultry is provided on a three monthly basis by the WR team at the moment. The withdrawal of this service will witness within a matter of months a return to the original high stock mortality, particularly amongst poultry. Therefore, much of the present vaccine and dosing related achievements in reducing livestock mortality is depended on WR continuity or some other institution stepping in to continue this service. At this time the only other non government institutions active in livestock welfare are the British institution, Vet Aid, who are undertaking dipping tank rehabilitation within the area and CEAR, involved in livestock distribution in Guija and Chokwe.

### **6.2.3 Recommendations**

World Relief should continue to provide agricultural extension service for at least a further year beyond the life of the current grant given the fragile status of current sustainability and the continuing lack of appropriate representative organisation at the community level.

If WR continues the activities should focus on training the community in animal and crop husbandry techniques which can be applied by the community without the need for continuing external assistance

A major focus should be the development of representative community/producer organisations which will be capable of representing and addressing the farmers needs.

The extension team should be reduced and if motorcycle mobility is to be maintained, the area of coverage of each extensionist increased.

The leader-farmer concept should be resurrected as a means of spreading the coverage of the extensionist and insuring the more in-depth training of certain community residents to insure a continuity of the knowledge and skills passed on.

The provision of materials should be made at the real cost of delivery wherever possible and every attempt should be made to use materials that are locally available and within the future community organisation's to access on its own.

Local traders and store keepers should be encouraged to stock limited supplies of the most important veterinary supplies especially where this presents the possibility of extending a cold chain for certain essential, nationally available vaccines, e.g. for the treatment of Newcastle Disease.

World Relief should attempt to maintain the Newcastle vaccination coverage established, however every attempt should be made to reduce and free the organisation of this dependence during the next year. This could be done by a combination of strategies

- Training and equipping<sup>3</sup> community members/representatives. An attempt should be made to encourage the community to provide some recognition for this role as now occurs with well maintenance. These individuals should be accountable to the community organisation. Where possible these individuals should be people unlikely to be frequently travelling away from the community, i.e. women.
- Encouraging the government veterinary representatives to stock a supply of essential vaccines at the district level. To co-ordinate closely with the government vet agents and encourage them to be involved and take responsibility within the programme where ever possible
- Encourage local pharmacies and traders to sell the products on a for profit basis, e.g. in Chokwe
- Encouraging other institutions to share the task.
- To set clear time limits to the extension of WR responsibility and advertise these as early as possible.

## **6.3 Livestock improvement and multiplication**

### **6.3.1 Achievement of objectives**

The comparative analysis of the baseline and end of project status regarding livestock programme performance are presented in Appendix F. The summary of the livestock improvement objectives achievements are presented in Appendix E., Table e1).

**Enable the rehabilitation of livestock populations by multiplying and exchanging smaller species and exchanging for large animals.** It appears that this process has not begun to take place yet. No monitoring, baseline or end of project status information was recorded and no comment regarding this activity was noted at the community level. Given the lower than projected numbers of households distributed with breeding stock and the relatively short period of time this stage has been active it is not surprising that this type of upward extension has not yet been in evidence. Note should be made that many of the goats were only distributed to beneficiaries during July/August 1997. This was an unrealistic objective given the

<sup>3</sup> Equipment here is taken to mean the hard wear needed to dose or vaccinate.

livestock holdings at the outset and the relatively short duration of the current amendment.

**Construct 4 and maintain 6 livestock multiplication centres.** The 4 centres were constructed and maintained, including the continued management of the previous 2 centres established prior to October 1995. The livestock centres have proved to be of questionable benefit and the programme had taken a decision prior to the evaluator's visit to distribute all the stock in these centres, e.g. total of goats in these centres at the beginning of July was 458 and at month end, 48. The structures have been offered to the communities for them to choose how to manage and stock these units, if at all, in future. Some discussion is going on and there is an interest being expressed by the more progressive farmers, to use these as commercial production centres for chickens.

The main reason for their 'below expectation' performance regarding multiplication was principally due to low and late stocking. Difficulties with goat purchasing from the exterior proved problematic and some goats bought from Save the Children resulted in high losses. The monthly performance of these centres is recorded in the monitoring reports (e.g. Appendix G., Tables 4.5., 5.2., 6.2., 7.7.). One of the criticisms raised by one extensionist, is the wisdom of encouraging enclosed breeding and production of chickens where access to grain and feed supplements is often so limited.

However, these centres appear to have provided an effective base for education, demonstration, provision of treatments and a focus point for the local extensionists and communities. They have also been used successfully on various occasions to carry out controlled breeding experiments on local stock, e.g. the artificial control of ovulation and the introduction of improved billies resulting in control over the time of kidding and in one case a very high percentage of female kids. Although this type of husbandry intervention was interesting it is not a practice that can be easily adopted or afforded by local producers. If the programme is to continue the wisdom of dismantling these structures is questioned.

**To assist 5709 direct and 16976 indirect beneficiaries through the livestock multiplication centres.** The total number of direct beneficiaries is claimed by the programme to be 6069. The calculation of indirect beneficiaries used is to multiply the direct by 3, i.e. 18207. As mentioned earlier the way the number of beneficiaries is calculated refers to the number of referrals made, plus those who received stock from the programme. This calculation does not give a true picture of the number of individual households assisted. A more accurate estimation of beneficiaries is given in the first section regarding agricultural extension above, i.e. 2287 direct beneficiaries. This represents an achievement of 40% of the stated objective.

**Note:** The evaluator has addressed these objectives as they have been laid out in the grant amendment document. However, there is some doubt as to whether the 11000 direct livestock beneficiary household objective set as the first of the specific objectives under community extension was not actually intended to represent the total direct beneficiaries of the whole agricultural programme, including the those involved in crop husbandry. The similarity of these two objective statements, but the larger difference in expected direct beneficiaries would suggest this may be the case.

#### 6.3.11 Specific impact expectations

**Increase livestock ownership rates amongst beneficiary families, 15% for goats, 35% for chickens, 40% ducks and 60% for guinea pigs.** The actual

measurement of the specific beneficiary households has not been monitored as such. The comparison which has been made is between the status of livestock ownership within the targeted communities, i.e. by taking a random sample of households in both baseline and the end of project surveys (Appendix F, Tables 2a., 2b, 3a.).

**Note:** It should be noted that the population of the target communities grew by 12% between the two surveys. This growth is attributed to continuing resettlement of returnees. If it is assumed that these returnees will possess little or no livestock on arrival, it will tend to push down the probable increases in mean livestock household numbers.

The average increase of household goat flocks is 15%. The increase for chickens is 36%, ducks 0% and for guinea pigs 100%. Apart from ducks the increases are equal to or above expectations. The size of household sheep flocks rose by 10% but household cattle numbers dropped by -9%. Mortality amongst cattle remains a problem and the programme should seek to address this in future.

One of the most interesting successes and innovations of the programme is the introduction of guinea pigs which have proved productive and relatively trouble free if forage is available. They are eaten and liked.

The increase in households owning chickens is 13%, ducks 12%, sheep 3% and guinea pigs 13% (see Appendix F, Tables 3b. and 3c.)

The above statistics do suggest that the programme has had a broad positive effect on the livestock numbers in general within the targeted communities. This indicates that there is a real secondary or indirect impact.

**30% increase in the consumption of meat and or sale or slaughter of each livestock type.** The pertinent information is presented in Appendix F., Tables 7a., 7b, 8a., 8b. To measure meat consumption, respondents were asked to state how often they had eaten meat within the last two months. A decrease of goat consumption of 36% was recorded, while the consumption of mutton rose 8%. Similarly the frequency of eating chicken rose 36%, although there was no change regarding ducks.

The decrease in goat consumption could be attributed to the attention and added value of goats brought about by the programme's interventions, leading to goat owners focusing on building their flocks once they had been able to reduce mortality rates. This could indicate that the goat has again become an asset and not a liability.

It is also estimated that the real change in normal chicken consumption is 81%. This is due to the fact that at the time of the baseline survey, communities in Area 1 and Area 6 were experiencing a severe attack of Newcastle Disease and were eating their hens rather than discarding the ill birds.

The aim of increasing meat consumption by 30% has been met and passed. However, these figures demonstrate the overall increase within the community, and it is not possible, given the data available, to give a more precise estimation of what portion is directly attributable to the WRP programme. Clearly it has had a significant impact on this increase.

**200% increase in the population of each livestock species.** This is a rather strange impact expectation given the short length of the programme. It is therefore taken to be the objective for the multiplication of livestock distributed to beneficiaries and or within the multiplication centres. Data for precise measurement of this objective does not appear to be available.

A decrease in stock mortality of 8% for goats, 20% for chickens and 5% for ducks (See Appendix F. Tables 6a., 6b). The findings demonstrate that The mortality rate for goats dropped by 11% and 10% for sheep. The decrease for chickens was 20%, if all the communities surveyed are included, and 9% for ducks. Attention is drawn to the situation during the baseline involving communities within areas 8 and 9. It is claimed in these communities it was unnaturally low due to people selling of their chicken due to Newcastle Disease. If these areas are removed from the analysis, the mean decrease in chicken mortality is 31%. This appears to tally with the communities own observations. They attribute the notable reduction in chicken mortality directly to vaccinations.

This outcome expectation has also been met, and surpassed if the above adjustment is taken into account

A 10% increase in indigenous goat fertility and 15% increase in the twinning rate (See Appendix F Tables 10, 11, 12, 13.) There are two different methods presented for measuring fertility. The fertility rate and the Fecundity. The fertility rate for goats actually declined 9%. This negative result may be due a greater awareness regarding goat health and their flocks performance due to the impact of extension. However, the fecundity of goats is shown to have increased by 23% for goats and 21% for sheep

The twinning rate for goats rose by 6% over the last 12 months while the kidding percentage rose by the same amount

These impact outcomes fall below the expected result if the fertility rate measurement is used. It is felt that heightened awareness regarding animal health leads to more critical observation. This may well account for these lower than expected figures regarding fertility. The late distribution of animals also will have limited the secondary or indirect impact of improved blood on the general flock.

### **6.3.2 Evaluation.**

The most important and wide reaching impact is the increase in the consumption of chickens and the reduction in their mortality rates. This combination has made a significant impact on both food security and improved household economies. The Newcastle vaccinations are noted by the communities as the principal reason for the improvement in their chicken population. Although the vaccination programme is fragile regarding sustainability criteria, attempts should be made to continue it while an alternative local support structure is developed.

Although the direct beneficiary numbers fall short of the proposed target, there appears to have been a wider than expected secondary impact. This is attributed to the education and livestock health assistance provided which the people are now seeking out. This is demonstrated by the number of households within the target area which are now using the advisory and veterinary services provided by the WR extension team (see Appendix F Tables 5a., 5b.). The figures in these tables represent the percentages of households accessing extension / veterinary services within the previous two months. The data therefore also provides an indication of the level of participation. For goats 55% have utilised WR extension services, representing an increase of 52%. For sheep the number is 64% indicating an increase of 63% and for chickens the number claiming to have accessed these services is 65%. Referrals related to cattle also indicate that 25% of households involvement although this species was not specifically addressed by the programme.



These findings demonstrate the real number of households benefiting from the livestock extension programme is 5832<sup>4</sup>. If this figure, drawn for the end of project survey is taken, then the programme has achieved 99% of its intended objective. It is the opinion of the evaluator that this is the more accurate figure for those benefiting from the livestock centres, as the monitoring format used by the programme only records referrals of a specific nature, e.g. it does not record those who sought advice. To attain this coverage is a significant achievement.

The coverage of each field based extensionists can therefore be taken to be 469 households. Given the dispersed nature of the population in the area this is considered to indicate a reasonable degree of efficiency. This could be expanded by reinforcing and utilising the leader farmer concept in conjunction with the current group approach. The level of participation also indicates that the extensionists have won the confidence of the population and clearly are considered competent.

### 6.3.3 Recommendations

Maintain a focus on animal husbandry education/extension as opposed to the purchase, multiplication and distribution of poultry and animals.

Maintain and strengthen the veterinary care side of the programme where this can be provided at cost. Cattle should be included, both in the husbandry education curricula and veterinary support services. It is more likely that those with cattle will be in a condition to pay fully for services rendered thus providing a source of income to the programme.

It is most important that for the immediate future every effort is made to continue the Newcastle vaccination programme and possible inclusion of duck vaccinations now the vaccine is available locally.

Attention must be paid to continued in-service training of the extension team not only in husbandry knowledge and skills but also in extension methods.

Avoid the more technically complex and expensive methods of controlling ovulation cycles, keep it simple and locally appropriate.

The issue of totally dismantling the livestock multiplication centres should be revisited.

The monitoring of the distributed livestock should continue give the short period of time since their hand over.

## 6.4 Crop Diversification and Improvement

### 6.4.1 Achievement of Objectives

The achievement of objectives within this sector have been effected by extremes in weather conditions over the past 2 years, e.g. floods, drought and frosts. Drought is still the most important threat to crop production within the area, traditional agricultural economy having been based on an extensive grazing of livestock. Given the severe depletion of the livestock population during the war and the almost total annihilation of game, the returning population are faced with an abnormally high dependency on crop production and the need to adapt this dependency to the prevailing conditions of the area.

<sup>4</sup> This is calculated by taking 65% of the close out survey's population universe, i.e.  $(8664 / 100) * 65 = 5832$ .

The programme has been active in stimulating both the increase of the area under appropriate crops and in encouraging the multiplication of local farm-based multiplication of seed and vegetative material. The provision and multiplication and redistribution of root crops such as cassava and sweet potatoes are particularly valued by the producers interviewed. The cassava promotion and spread was, particularly, singled out by both government personnel and producers as the most important sustainable impact regarding improved local food security.

It is difficult to estimate the exact area of improved or alternative crop introduced due to the WR agricultural programme during the life of the present amendment. It is even more difficult to determine to what extent this cropping area is wholly or partially as a result of this specific USAID grant modification, i.e. WFP contributed added significantly to the promotion of cereal crops through the WR programme. Given the wording of the grant modification document the total area is attributed to the grant. It would also not have been possible for WR to have maintained the staff necessary to carry out effectively the distribution and trials of seed and vegetative material from other donors.

The total area planted in cereals and sweet potato alone, as a direct result of WR programme intervention during the life of the amendment, is estimated to be 3426ha. (see Appendix E. Tables e5, e6). This does not take into account winter vegetable crops, and the continued secondary distribution of cassava, which has not been monitored. This far exceeds the stated objective of 350ha.

#### 6.4.1.1 Cereal crops

**Promotion and resale of millet and sorghum at 150%.** The millet and sorghum seed was not sold at 150% of cost as suggested in the grant. This was because of the significant free donation of WFP seed. This basically would have killed any existing market possibility.

The sorghum and millet have tended to meet with a degree of community resistance in areas south of Mapai. The north and western sectors of Gaza are the only areas where a tradition of growing these grains appears to persist.

The WFP distribution resulted in poor average yields, i.e. 290kgs. per hectare for sorghum and 360kgs for millet. The main reason for this was the late reception and distribution of this seed. The sowing season for these crops is October/ November the seed was not distributed until early December and January. One of the biggest problem of late sowing in the area of all crops is the significant increase in pest problems, e.g. birds, field rats and insects.

**The objective of establishing 25 \* 10 hectare community blocks of cereals for joint pest management** has only been partially addressed. The people preferred to grow their cereals in their own fields. However, group management of vegetable plots is being practised by the women in many areas but even here even on a far smaller scale the individual plot is still preferred.

**400 on-farm trials of cereals and pulse crops.** No hard data exists regarding the achievement of this objective.

#### 6.4.1.2 Root Crops

**Training in the multiplication of existing cassava stock.** The level of this activity has not been specifically monitored during the life of this amendment. However, the activity is being encouraged and farmer to farmer redistribution of cassava stacks was witnessed. The previous WR distribution in 1995 led to the establishment of estimated 6630has. within the whole target area (Appendix E. Table e5).

As mentioned above the reintroduction/introduction of cassava is considered to be the single most important contribution toward increased food security. Many of those interviewed said that it was now the main food source during the dry period as a result of the failure of the last grain harvest due to drought. The people are eating both the root and the leaves. The leaves are mixed with local marula nuts to increase the protein content. The programme should place far more attention on encouraging farmer to farmer redistribution and district to district where, as in certain communities near Mapai, a particularly bitter variety had been introduced.

**Procure and distribute sweet potato stems at cost.** This objective has been addressed in part and monitored (Appendix E, Table e6). The sweet potato vines procured by WR were not sold because it was considered that those in need could not afford them. Instead the beneficiaries have been encouraged to redistribute an equivalent amount once their plants are established. 11752kgs. were procured and distributed between 3109 households. The estimated coverage of this distribution if an estimate of 80kgs per hectare is used is 196has. The monitored redistribution to a further 288 households has taken place resulting a possible total planted area of 214has.

This crop is highly valued by the local communities and there is a continuing demand for it. It is surprising that an attempt at selling the vines at cost or a percentage of cost was not made by WR given the nature of this stated objective and the interest of the producers.

WR has constantly been involved in free distribution and actions focused on the most disadvantaged sectors of society. This has made it difficult for them to address some of the objectives whose intentions were to encourage sustainable development and begin to break the dependency on relief. The most disadvantaged may not be the correct sector to target for initial distribution if the aim was to maximise the possible sustainable production and redistribution of the crop.

#### 6.4.1.3 Pulse crops

**The identification testing and sale of improved cowpea varieties at 150% of cost.** This objective was not addressed it appears because of the cost of these improved varieties, emphasis was placed instead on the on-farm cultivation and multiplication of indigenous pulses such as cowpea and Bambara groundnuts.

The area under cowpea and Bambara groundnuts was monitored in various communities within Guija. The results indicate that the mean household area under these crops is 0.05has. If this is applied to the total target population it is estimated that the total area sown to pulse is 433has. (Appendix E Table e7). This area cannot be attributed to specific WR intervention during the past two growing seasons.

**Establish 100has. of short season varieties.** This has only been partially addressed through the limited sale of Bambara seed (see below).

**Procure test and distribute at cost Bambara and other improved groundnut varieties.** Again this objective appears to only have been minimally addressed. Approximately 51kgs. were sold to 109 beneficiaries for a total of 743000mts. The distribution of less than 0.5kgs. per beneficiary is really minimal although it makes the beneficiary statistic look good.

#### 6.4.1.4 Vegetable crops

The promotion of cool season vegetables which can be reproduced locally. This objective has been one of the most important activities for the WR extension staff. The production of vegetable gardens is occurring in most water catchment areas or

along the river banks growing a variety of crops. The most dominant apart from maize and sweet potatoes are tomatoes, shallots and garlic and in some areas onions. The producers interviewed valued this activity but it was ranked 4 out of the 5 WR interventions mentioned.

The evaluator does have some reservation about the ability of tomatoes to qualify as a locally reproducible crop. Evidence shows that within a very short period the fruit from reproduced seed becomes very small. This is possibly due to cross pollination with a wild variety in the area that produces cherry sized fruit, but which is very resistant.

The producers have constantly experienced a loss of crop due to flooding, cold snaps etc. Their seed stocks have constantly been replenished over the past few years by donations, as was the case during this last season. This constant free distribution must work against local reproduction and the adoption of more appropriate vegetable crops for the conditions experienced in the area.

During life of this amendment WR has distributed vegetable packs to 6220 beneficiaries, approximately 268kgs. of seed (Appendix E. Table e8).

WR have formed 58 vegetable producer groups with a total membership of 587, or a mean membership per group of 10. These are predominantly women.

Insects are a particular problem. Little local knowledge appears to exist regarding the control of pest by nature or organic means. Ash appears to be the remedy for most insect problems. Some have experimented successfully with the application of brewing tailings as a repellent but overall there is a lack of knowledge regarding locally appropriate pest control. This should be a major feature of WR future extension training in the area.

The sustainability of some of the more delicate crops is questioned. The people have expressed particular interest in onions but little cultivated in comparison to tomato, a far more delicate crop.

**Train 200 leader farmers in the production and storage of vegetable seed and planting materials.** (see Appendix E. Table e3). 122 leader farmers have been trained in these activities, an achievement of 61% of this objective. The move away from leader farmer to producer group extension methodology may mean that many more have been trained than as specific leader farmers.

#### 6.4.1 4.1 End of impact expectation

**15% increase in the production of seed and planting materials.** This outcome has been achieved. The households now producing their own vegetable seeds and planting material is estimated to be 1317, representing an increase of 394%. (Appendix F. Table 14.) Many were observed to be leaving plants to bolt for seed in their gardens, e.g. onions.

#### 6.4 1 5 Fruit Trees.

**Locally produce and sell at cost 6000 fruit trees.** The full concept in this objective has been addressed, i.e. both the production and sale of seedlings. 1261 seedlings were produced and sold.

**Encourage the construction of stock proof fencing.** These has clearly been done with some success. One of the aspects noted in the villages visited was the number of cone cages to protect the young trees which have planted around their compounds. This was a visible indication of the interest which has been generated within the communities regarding this topic.

**Promote the village level commercial production of local fruit trees.** This has been attempted by the groups producing seedlings for sale within their own nurseries. However, as yet a local market is still to materialise.

It is felt that it was probably a little premature to encourage this as a commercial venture at the community level and the lack of market within these communities could have had a demotivating effect. Response from within these communities. The local collection of seed and the production of a variety of natural fruiting species for household consumption should continue to be promoted as a method building food security. However, this should be done within the normal household budget and not be provided with external inputs such as bags etc.

**Establish 5 nurseries producing local fruit trees.** In all 55 group nurseries have been established. There are at present 42 fruit tree interest groups with a mean membership of 7.

#### 6.4.1.6 Field and Post Harvest Management

Raise awareness of losses caused by rats and promote control method. Rats are a very real problem both to the standing crop and stored grain. The WR programme has addressed this issue at both levels with the producers, i.e. in the field and regarding post harvest management of grain and seed.

Within the field training has been given in building and setting large scale traps with some limited success. The rat problem in the field is much more a challenge. The principal method of control regarding the protection of harvested grain has been the promotion of metal cladding for the legs of the traditional grain bins. In all 1283 grain bins have been protected in this way involving 1164 households. The metal strips were provided by WR through a grant received from the UNHCR.

This method of grain bin protection has reduced losses due to rats by 960% or from approximately 3% of the grain to 0.3%. However the test of the system will be to see when new bins are built if an attempt to continue with this practice at their expense will occur. It is questionable for two reasons. Firstly many prefer to have their kitchens under the bins and thus tend to partially enclose the lower section providing the rats with easy access. The second and more serious is the far greater loss caused by weevils.

Weevils account for over 40% post-harvest loss, increasing the longer the grain is stored. This is a serious issue as recognised most farmers, however, most have learnt to accept it as the norm. Very little local knowledge exists regarding the control of this, the most serious of pests they face.

It is strongly recommended that various alternative treatments of seed be tried and promoted, i.e. the dipping in a tobacco infusion for grain kept for seed and the use of ash and other less pungent infusions for the food reserves. Low cost approaches should be explored and defused. The cost of replacing or rebuilding the traditional silos may prove prohibitive, however, a limited trial of the local manufacture and sale of metal bins may prove to be worth while. The air tight nature of these containers will permit the fumigation of grains not possible in the traditional bins.

**Train Leader farmers in traditional pest control methods and the promotion of pest resistant varieties.** There was little evidence of this activity. The attempts to encourage grain farmers to work in groups to co-ordinate the defence of their crops has not met with a very positive response.

Knowledge about most pest control methods appears very limited both regarding insects, animals and birds.

## 6.4.2 Evaluation

The main strength of the crop diversification and improvement was related to the redistribution of root crops. These crops are recognised to have significantly improved the food security of the participant households during the dry periods of the year. The evidence of the vegetative material now being passed from farmer to farmer bodes well for a sustainable and increasing impact over time of these interventions. This represents probably the most significant contribution made by the programme to the well-being of the people of northern Gaza. The investment in these resistant roots has proven both cost-effective and also the most sustainable of all the WR programme interventions.

The other encouraging outcome was the very positive result regarding the reproduction of vegetable seed.

One of the weaknesses has been the failure to move completely from the relief handout mode, to promoting cost recovery and the reestablishment of local produce markets. In general the programme has only partially addressed those objectives which requested some form of cost recovery.

## 6.4.3 Recommendations

The main areas of an extended agricultural programme need to focus on encouraging the spread of those crops which have proved appropriate to the zone, e.g. sweet potatoes and cassava, and education in the husbandry of the traditional crops, particularly low input methods of pest control and post harvest management.

The programme needs to shed those activities which will not be sustainable at the local level and concentrate on cost recovery for any inputs that may be necessary even if received in kind over a stipulated reasonable period. (I am not suggesting the provision of rural credit.) This lower key approach, focusing on education rather than provision, may mean a considerable reduction in the beneficiary head-counts that distribution institutions tend to promote and monitor with such rigor. Quality as opposed to quantity needs to become a guiding principle. The criteria for assessing that quality need to profile highly the issue of sustainability.

Methods of monitoring the impact of extension education need to be introduced.

## 6.5 Maintenance and Monitoring of the Boreholes

Prior to this current amendment WR drilled 163 deep bore and installed pumps. The Afridev pump for the shallower wells and the Volante for the deeper wells. The communities were organised and selected individuals trained in the more rudimentary maintenance and repairs. A structure of monthly community water tariffs was also established by September 1995. The expectation objective of this amendment is to ensure the continued operation and maintenance of this system.

Only two pumps were awaiting repair at the time of the evaluators visit. The evaluator visited several of the well sites on a random basis while conducting this evaluation. Only one well was observed to be non functional and one was reported to be having difficulties. When the village pump attendant was asked for they were present. The surrounding area of the wells have been maintained and the units are protected from access by livestock. The community members are paying between 1000mts. and 5000mts. per month. The community is charged for parts and it is felt that this charges could be increased to help finance continued maintenance. The exceptions would be isolated areas such as Chigubo where a cash economy does not exist.

One particular problem was mentioned that continues to dog the Volante pumps, the weakness of the pipe couplings. This has been resolved, strengthened couplings being acquired from the manufactures. However, the policy is to only replace these when the pump next requires lifting.

A team of two technicians have been retained and provided with mobility and a stock of repairs to maintain the wells. The stock spares was further built by an in-kind donation from the UNHCR.

One of the main problems being encountered is the tendency of the trained village level well guardians to leave for extended periods of work in South Africa.

The maintenance team are repairing on average 20 to 23 pumps per month. One of the reasons for this is the excess use most are receiving. Many of the communities have grown rapidly since the wells were installed. The Volante pumps tend to break down every 6 to 12 months, the Afrdev, however, needs repair on average once every three months. The wells are still not adequate to meet the demands of the population.

The wells continue to have a marked influence on the improving health of the community. Scabies and malaria are notably reduced, as reported by both the medical staff and community members. The instance of diarrhoea in children > 2 years has been monitored in those communities with wells and the instance has continued to drop, i.e. 55% at 1/1995, 33% at 1/96, 30% at 1/97 and 20% at 6/97. These figures were supplied by the WR Child Survival programme.

There is a great deal of concern regarding the future of this maintenance programme. No alternative structure has been identified to take this responsibility. There is a certain degree of alarm as it is evident that the whole system would gradually collapse over a year. Agua Rural are also very concerned. Although they say they cannot manage to undertake the programme, they are prepared to consider making a donation to WR to help maintain this servicing structure.

### **6.5.1 Evaluation**

The maintenance programme has been effective and very efficient. It is not a sustainable system and it now provides the water need for a large portion of the population of Northern Gaza.

WR have left the issue of close out far too late to now effectively, and responsibly withdraw from this aspect of the programme by September 1997. It does not appear that an alternative overall servicing structure has been identified and a sustainable one has not been created by WR to date.

### **6.5.2 Recommendations.**

WR should make it a priority to maintain this well service for another year. During that period serious efforts should be made to identify an alternative structure capable of maintaining this system indefinitely. This may also be achieved by turning this service into a for-profit activity. The feasibility of this option should be studied as it may be the most sustainable option in the long run.

The principal technician should be maintained and with his current mobility provision over the next year to continue the provision of pump servicing/repair.

The charges for the materials and services should be increased to at least come into line with Agua Rural's recent price increases.

The technician should also be encouraged, when and where possible, to undertake for profit work using the Vondarig to help subsidise the costs. Alternatively if this rig is not to be used, it should be sold to help finance this service.

WR needs to start planning a responsible withdrawal from this responsibility immediately so as to have that possibility within the next year.

## 7. Conclusions

The programme has achieved most of the expected outcomes set in the current grant amendment. Although the specific objectives regarding direct beneficiary involvement in the livestock programme fell below the objective set for the livestock multiplication centres, the group extension model adopted and the education and services provided proved very effective. The approach taken has also proved reasonably cost effective.

The impact of the extension training and services has led to a significant overall improvement and growth of the small livestock population and to a lesser degree improvements in local crop husbandry practices. However, WR has also continued to provide a free distribution structure for cereal and vegetable seeds, which it is considered tends to conflict with the more developmental approach promoted through the objectives set in the current amendment.

The three areas of most significant impact are:

- the introduction and/or redistribution of root crops, cassava and sweet potato,
- the provision of livestock extension services, particularly the provision of regular Newcastle vaccinations for poultry;
- the well maintenance programme.

The only one of these three that could be considered sustainable is the multiplication and redistribution of root crops. This is considered to have had the single most important impact on sustainable food security of WR's various initiatives in Northern Gaza. The impressive improvement in small livestock is dependent in particular on the continued provision of a regular access to Newcastle vaccine. The water or well maintenance service has maintained a water structure that would have probably collapsed over the past year and still remains heavily dependent on a similar on-going service structure to maintain it into the future. These last two services presently are locally non-sustainable. However, on these two services much of the human and animal welfare of this northern region now depends.

The conclusion is that WR should attempt to maintain these two services for a year given the current failure to identify an alternative structure/s capable of undertaking these roles. If they are left unattended much of the current achievements in both human and livestock health will be put at risk. These are seen to be simple but critical continuing needs. This pressure on WR to continue for a limited period is in part due to the failure to develop or identify appropriate local institution/s to work with or through. If WR continues in a limited capacity in these roles the primary objective must be the development of local linkages and the identification of local counterparts.



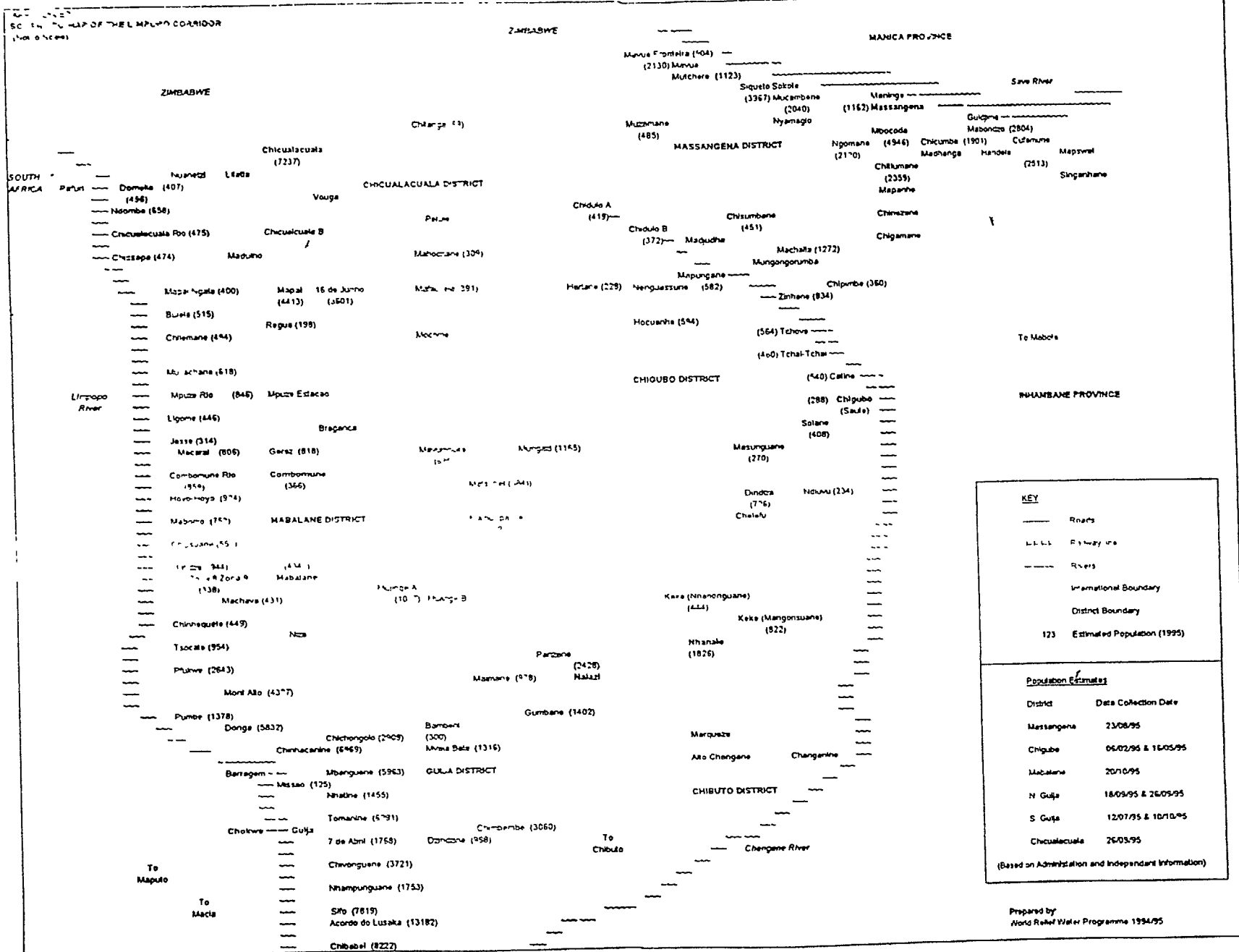
## **8. Appendix**

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**Appendix, A Map of the area.**

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## Appendix B. Terms of Reference

WORLD RELIEF CORPORATION  
WORLD RELIEF (MOZAMBIQUE)  
AGRICULTURE AND LIVESTOCK REHABILITATION PROJECT  
END-OF-TERM EVALUATION : SCOPE OF WORK

PURPOSE:

To evaluate the accomplishments and management of the agriculture and livestock rehabilitation project of World Relief in Mozambique (WRM) in accordance with expanded program description and expected activity outputs in the fourth (4th) modification of the Grant Agreement: 656-0217-G-SS-3003-00.

EVALUATION OUTPUTS:

The evaluator will be responsible for preparing an original unbound copy (hardcopy and disk format) of the final report to World Relief Corporation (WRC) in Maputo by August 15, 1997, and in Wheaton by August 22, 1997.

The report should provide the following:

1. An assessment of the impact of the project and to what extent the project objectives has been met in terms of the multiplication and redistribution of various livestock species, including: chickens, ducks, guinea pigs and goats.
2. An assessment of the extension activities with regard to various practices of animal husbandry, including immunization of chickens, treatment of goats for internal- and external parasites, as measured by the increase in ownership and the decrease in overall mortality rates of the various livestock species and the interest shown by beneficiaries in the formation of interest/producer groups or associations.
3. An assessment of the successful promotion of a diversification of crops, including, cereals, pulse crops, vegetables during the cool season and fruit trees.
4. An assessment of the extension activities in the field of crop production as measured by the formation of producer groups and the adoption of improved crop production and storage practices, including the protection of granaries against rodents.
5. Recommendations to WRC/WRM for further actions to be taken in order to safeguard the investment made under the project activities during the life of the project and to access additional funding sources, if necessary.
6. Brief overview of the effectiveness of the maintenance program

for the monitoring and repairs of the water pumps that were installed under the earlier Grant modifications, including the continued access to quality water.

The body of the evaluation report should follow guidelines provided by the Maputo Mission of USAID, and should include, but is not limited, to the following:

- \* Executive Summary
- \* Project background
- \* Evaluation Methodology
- \* Achievements of Objectives:
  - A. Improvement of Income and Food Security Levels
  - B. Stimulation and Formation of Community Producer Groups
  - C. The active participation of women in the groups as well as in leadership positions.
  - D. Training for Improved Animal Husbandry Practices
  - E. Training in Multiplication Methods of Root Crops
  - F. Production, Multiplication and Supply of Cereal Crops, Pulse Crops and Vegetable Crops.
  - G. The Increase in the Supply of Fruit Tree Seedlings
  - H. Training and Promotion in Traditional Pest Control methods and the Promotion of Crop Varieties resistant/tolerant to pests
- \* Quality of Programming
- \* Quality of Training at Community Level
- \* Capacity Building
- \* Sustainability
- \* Linkages
- \* Recommendations
- \* Review of Assessment and Recommendations.
- \* Conclusion

The final report must also include a schedule of field visits and contacts interviewed. WRM will make available to the evaluator the following documents, on the basis of which the assessment will be based:

1. The WRC/USAID grant Agreement
2. Quarterly reports to the USAID in Maputo
3. Other documents considered relevant by the evaluation team.
4. Interviews with WRC/WRM Agriculture and Livestock Rehabilitation Project staff, beneficiaries, District and Provincial Directors of Agriculture and Veterinary Services, USAID, other NGOs/PVOs, and other individuals considered relevant.

## **Appendix C. Sample for Baseline and End of Project Surveys**

## Total households and sampling for both the Baseline (BLS) and End of Project Surveys (EPSS)

| Date of BL | District              | Villages              | Total of Households | BL Sample | Date of | Total of Households | EPSS Sample |
|------------|-----------------------|-----------------------|---------------------|-----------|---------|---------------------|-------------|
| 6/96       | GUIJA AREA 1          | 1 Acordo de Iasaka    | 1066                | 20        | 6/97    | 1317                | 55          |
|            |                       | 2 Sifo                | 518                 | 16        |         | 774                 | 29          |
|            |                       | 3 Chibabel            | 607                 | 15        |         | 1110                | 32          |
| 6/96       | AREA 2                | 1 Chibvonguene        | 348                 | 12        | 6/97    | 436                 | 20          |
|            |                       | 2 Mianpunguane        | 328                 | 18        |         | 328                 | 20          |
|            |                       | 3 Dzindzine           | 202                 | 20        |         | 229                 | 12          |
| 6/96       | AREA 3                | 1 Chinhacanne         | 613                 | 30        | 6/97    | 613                 | 32          |
|            |                       | 2 Ndonga              | 668                 | 20        |         | 929                 | 35          |
| 7/96       | MABAI ANE AREA 4      | 1 Tsocate             | 398                 | 41        | 6/97    | 253                 | 30          |
|            |                       | 2 Covele              | 112                 | 9         |         | 120                 | 11          |
| 6/96       | AREA 5                | 1 Mutidze             | 95                  | 30        | 6/97    | 96                  | 20          |
|            |                       | 2 Zona 8              | 49                  | 10        |         | 49                  | 8           |
|            |                       | 3 Zona 9              | 25                  | 6         |         | 26                  | 6           |
| 6/96       | AREA 6                | 1 Mabomo              | 106                 | 14        | 6/97    | 106                 | 10          |
|            |                       | 2 Chipsane            | 141                 | 21        |         | 148                 | 11          |
|            |                       | 3 Hoyo-hoyo           | 132                 | 10        |         | 303                 | 10          |
| 6/96       | CHICUALACUALA AREA 7  | 1 Bucla               | 103                 | 25        | 6/97    | 109                 | 15          |
|            |                       | 2 Chilemane           | 119                 | 25        |         | 87                  | 15          |
| 6/96       | AREA 8                | 1 Ndombe              | 177                 | 20        | 6/97    | 135                 | 15          |
|            |                       | 2 Muzamane            | 72                  | 17        |         | 71                  | 10          |
|            |                       | 3 Chussapa            | 121                 | 12        |         | 121                 | 8           |
| 6/96       | AREA 9                | 1 Chicualacuala Rio   | 147                 | 20        | 6/97    | 147                 | 15          |
|            |                       | 2 Macassane           | 84                  | 21        |         | 84                  | 10          |
|            |                       | 3 Bacanha-mandla      | 76                  | 9         |         | 76                  | 10          |
| 6/96       | MASSANGENA AREA 10    | 1 Siqueto             | 249                 | 25        | 6/97    | 200                 | 15          |
|            |                       | 2 Mutambene           | 511                 | 25        |         | 446                 | 30          |
| 9/95       | MABAI ANE AREA 11     | 1 Combomane Rio       | 112                 | 11        | 6/97    | 207                 | 41          |
| 8/95       | CHICUALACUALA AREA 12 | 1 Mpuzi               | 131                 | 23        | 6/97    | 144                 | 40          |
|            |                       | TOTALS                | 7310                | 525       |         | 8664                | 565         |
|            |                       | % Population Increase |                     |           |         | 12                  |             |



## Appendix D. - Evaluation Schedule

Village leaders, beneficiary groups, extensionists and other informants interviewed in the project area.

| Date | District village | Village leaders | Number group participants | Extensionists                                 | WRM staff  | Other informants  |
|------|------------------|-----------------|---------------------------|---|--|---|
| 5/8  | Gulija           |                 |                           |   |  | Sr Dlamini, Dpt' Director of Agriculture  |
|      | Nhamunwane       |                 |                           | Eduarda Arnaldo                               |  |   |
|      | Chimbongoene     |                 | 20 women<br>3 men         |   |  |   |
|      | A' de Luska      | 3               | 25 women<br>10 men        | Joao Machazele                                |  |   |
| 6/8  | Mabatlane        |                 |                           |   |  | Sr Nwalande, Director of Agriculture<br>Sr Luciano, Supervisor of vet services                          |
|      | Tsocate          | 1               | *3 men                    | Isabel Chaguala                               |  |   |
|      | Matidze          | 1               | *2 women                  | Vicente Licula                                |  |   |
|      | Combomune Rio    | 2               |                           | Humberto Monjane                              |  | Mabuku Balo, village president  |
| 7/8  | Chicualacuala    |                 |                           |   |  |   |
|      | Mpuzi Rio        | 2               | 10 women<br>15 men        | Nataniel Nomborro                             |  | Feliciano Chaunque, village president<br>Sr Manganyi, Informal leader<br>Secretary of Chitemane village |
|      | Bueia            | 2               |                           |   |  |   |
| 9/8  | Chokwe           |                 |                           | *Gidione Mucavel, supervisor of extensionists | **Johnson Nghatsane, Director of WR agricultural programme   |   |
|      |                  |                 |                           |   | Juma Sulamane<br>Well team leader<br>Jose Bendane, Well team |   |
|      |                  |                 |                           |   | Dr Pieter Ernst, Director of WR community health programme   |   |
|      |                  |                 |                           |   | Linda Nghatsane, health educator                             |   |

\* Accompanied the evaluator during the whole of the period in the field.

\*\* Acted as part of the evaluation team and key informant.

\*\*\* Many beneficiaries involved in national census at the same time as the evaluation.

## Appendix E. Summary Tables

## Appendix E. Summary Tables

Table: e1. Summary of Livestock beneficiaries and payments for extension vet' services and animals received (1/10/1995 - 31/7/1997).

|  | Number of animals |              | Direct beneficiaries/ Households |             | Indirect beneficiaries |             | * Payments Received |
|--|-------------------|--------------|----------------------------------|-------------|------------------------|-------------|---------------------|
|  |                   |              | Male                             | Female      | Male                   | Female      | mts                 |
| <b>GOATS:</b>                          |                   |              |                                  |             |                        |             |                     |
| 1. Distributed                         | 414               |              | 34                               | 191         | 68                     | 382         | 28840000            |
| 2. Treat internal & external parasites |                   | 14488        | 501                              | 197         |                        |             | 57225000            |
| 3. Deworming only                      |                   | 5            | 5                                |             |                        |             | 7500                |
| 4. Mange treatment                     |                   | 168          | 6                                | 2           |                        |             | 532000              |
| 5. Treat diseases                      |                   | 21           | 13                               | 1           |                        |             | 166000              |
| 6. Treat eye infection                 |                   | 25           | 14                               | 1           |                        |             | 178000              |
| <b>TOTAL</b>                           | <b>414</b>        | <b>14716</b> | <b>573</b>                       | <b>392</b>  | <b>68</b>              | <b>382</b>  | <b>86948500</b>     |
| <b>CHICKENS:</b>                       |                   |              |                                  |             |                        |             |                     |
| 1. Distributed                         | 766               |              | 89                               | 422         | 267                    | 1266        | *                   |
| 2. Vaccinations for NCD                |                   | 39935        | 1473                             | 2199        |                        |             | 3291800             |
| 3. Treat for external parasites        |                   | 1597         | 62                               | 86          |                        |             | 210700              |
| <b>TOTAL</b>                           | <b>766</b>        | <b>41532</b> | <b>1624</b>                      | <b>2707</b> | <b>267</b>             | <b>1266</b> | <b>3502500</b>      |
| <b>DUCKS:</b>                          |                   |              |                                  |             |                        |             |                     |
| 1. Distributed                         | 509               |              | 62                               | 244         | 188                    | 732         | *                   |
| <b>GUINEA PIGS:</b>                    |                   |              |                                  |             |                        |             |                     |
| 1. Distributed                         | 908               |              | 173                              | 288         | 519                    | 864         | *                   |
| <b>CATTLE:</b>                         |                   |              |                                  |             |                        |             |                     |
| 1. Treat internal & external parasites |                   | 32           |                                  | 2           |                        |             | 96000               |
| 2. Treat external parasites only       |                   | 35           | 1                                | 3           |                        |             | 105000              |
| <b>TOTAL</b>                           |                   | <b>67</b>    | <b>1</b>                         | <b>5</b>    |                        |             | <b>251000</b>       |
| <b>GRAND TOTAL</b>                     |                   |              | <b>2433</b>                      | <b>3836</b> | <b>1040</b>            | <b>3244</b> | <b>90652000</b>     |

\* Livestock has been returned regarding these lines but no clear method of monitoring this has been maintained.

**Note:** On average men received 24% of the animals distributed. However, 45% of the livestock referrals for treatment were by men, i.e. 73% of goat referrals and 40% of chicken referrals were made by men.

Table e2. Interest Groups and membership

| Interest Groups by District          | Totals      | Fruit Trees | Chickens   | Ducks      | Goats      | Vegetables | Guinea pigs |
|--------------------------------------|-------------|-------------|------------|------------|------------|------------|-------------|
| 1. Guija                             | 64          | 10          | 18         | 10         | 11         | 9          | 6           |
| 2. Mabalane                          | 99          | 12          | 28         | 19         | 11         | 16         | 13          |
| 3. Chicualacuala                     | 92          | 14          | 14         | 14         | 10         | 31         | 9           |
| 4. Massangena                        | 39          | 6           | 8          | 10         | 0          | 2          | 13          |
| <b>TOTAL</b>                         | <b>294</b>  | <b>42</b>   | <b>68</b>  | <b>53</b>  | <b>32</b>  | <b>58</b>  | <b>41</b>   |
| <b>Membership of interest groups</b> |             |             |            |            |            |            |             |
| 1. Guija                             | 273         | 41          | 80         | 42         | 28         | 38         | 44          |
| 2. Mabalane                          | 730         | 31          | 176        | 116        | 96         | 162        | 149         |
| 3. Chicualacuala                     | 1120        | 195         | 136        | 127        | 197        | 369        | 76          |
| 4. Massangena                        | 155         | 27          | 14         | 29         | 0          | 8          | 77          |
| <b>Totals</b>                        | <b>2278</b> | <b>294</b>  | <b>406</b> | <b>314</b> | <b>321</b> | <b>597</b> | <b>346</b>  |
| Mean membership of groups            | 8           | 7           | 6          | 6          | 10         | 10         | 8           |

Note: Individuals can be members of more than one interest group.

Table: e3. Leader-farmers trained in the multiplication of seeds and planting material of vegetables and crop trials carried out.

| Districts     | Number of Leader-farmers | Number of trials |
|---------------|--------------------------|------------------|
| Guija         | 20                       | 7                |
| Mabalane      | 46                       | 0                |
| Chicualacuala | 44                       | 34               |
| Massengena    | 12                       | 24               |
| <b>Total</b>  | <b>122</b>               | <b>65</b>        |

Note: Approximately 70% of the leader-farmers were identified before September 1995. All have been trained during the past 18month period.

Table e4 Distribution of WPF sorghum and millet seed, Dec/96 -Jan/97

| District      | Sorghum Beneficiaries |             |              | Millet Beneficiaries |             |             |
|---------------|-----------------------|-------------|--------------|----------------------|-------------|-------------|
|               | male                  | female      | total        | male                 | female      | total       |
| Guija         | 1083                  | 1499        | 2582         | 428                  | 415         | 843         |
| Mabalane      | 633                   | 908         | 1541         | 633                  | 908         | 1541        |
| Chigubo       | 1415                  | 585         | 2000         | 1415                 | 585         | 2000        |
| Massengena    | 1576                  | 1219        | 2795         | 1598                 | 1257        | 2855        |
| Chicualacuata | 1808                  | 1425        | 3233         | 1483                 | 1029        | 2512        |
| <b>Totals</b> | <b>6515</b>           | <b>5636</b> | <b>12151</b> | <b>5557</b>          | <b>4194</b> | <b>9751</b> |

**Note:** The seed was provided by WFP, Dec/96, and given out free by WR staff team

- Quantity of seed distributed. sorghum, 57600kgs , millet, 24950kgs.
- Area sown. sorghum, 2870has ; millet, 1248.
- Yield per hectare: sorghum, 290kgs.; millet 360kgs. The low yields were due to late planting, i.e December - January rather than October - November
- Of those receiving these seeds, 45% were women.

Table: e5. Distribution of Cassava September 1995

| Districts     | Beneficiary Households | Area planted:<br>0.5 hect per household |
|---------------|------------------------|---|
| Guija         | 3087                   | 1543.5                                  |
| Mabalane      | 1861                   | 930.5                                   |
| Chicualacuata | 4577                   | 2288.5                                  |
| Massengena    | 3736                   | 1868.0                                  |
| <b>Total</b>  | <b>13261</b>           | <b>6630.5</b>                           |

**Note:** This distribution took place just before current amendment and material not funded by USAID

Table e6 Sweet Potato direct distribution May and July 1996 and subsequent redistribution

| District         | Beneficiaries/Households |             |             | Amount<br>KGs.<br>3.78 KGs Per<br>Household | Estimated<br>Area (Has.)<br>@ 60 KGs per<br>Has. |
|------------------|--------------------------|-------------|-------------|---|--|
|                  | May                      | June        | Total       |   |  |
| 1. Guija         | 396                      | 293         | 689         | 2604.42                                     | 43.41  |
| 2. Mabalane      | 377                      | 376         | 753         | 2848.34                                     | 47.44  |
| 3. Chicualacuala | 977                      | 485         | 1462        | 5526.36                                     | 92.11  |
| 4. Massangena    |                          | 205         | 205         | 774.90                                      | 12.92  |
| <b>Totals</b>    | <b>1750</b>              | <b>1359</b> | <b>3109</b> | <b>11752.02</b>                             | <b>195.88</b>                                    |

**Notes:**

- This estimate does not allow for possible loss or spoilage.
- This could be as high as 10%.
- The cost per beneficiary is  $(2592\text{mts.} \times 3.78\text{KGs.}) = 9798\text{mts.}$
- The programme monitored the redistribution of vines to a further 288 households. If similar amounts were received the total area planted in sweet potatoes is estimated to be  $((288 \times 3.78) / 60) + 195.88 = 214\text{ Has.}$
- The value of this monitored redistribution is taken to represent cost recovery. This is estimated to be  $(288 \times 9798) = 2818944\text{mts.}$  Approximately 17%.
- It should be noted that a significant amount of unmonitored redistribution is occurring, possibly greatly exceeding the monitored secondary donations.

Table e7 Estimated area under pulses and Bambara groundnuts for Guija District

| Village   | Crop         | Area per<br>Household<br>Has. | %<br>of population | EPSS number<br>of households | Estimated<br>total area<br>Has. |
|---|--------------|-------------------------------|--------------------|------------------------------|---------------------------------|
| A' de Lusaka  |              |                               |                    | 1317                         |                                 |
|   | Cowpea       | 0.10                          | 25                 |                              | 32.93                           |
|   | Bambara nuts | 0.20                          | 5                  |                              | 13.17                           |
| Dzindzini   |              |                               |                    | 229                          |                                 |
|   | Cowpea       | 0.10                          | 70                 |                              | 16.03                           |
|   | Bambara nuts | 0.20                          | 5                  |                              | 2.29                            |
| Chinhanine  |              |                               |                    | 613                          |                                 |
|   | Cowpea       | 0.10                          | 50                 |                              | 30.65                           |
|   | Bambara nuts | 0.20                          | 5                  |                              | 6.13                            |
| <b>Totals for Guija sample</b>  |              |                               |                    | <b>2159</b>                  | <b>101.20</b>                   |
| <b>Mean area per Household Guija</b>  |              |                               |                    |                              | <b>0.05</b>                     |
| <b>Estimated total area in pulses if Guija mean is applied to total target population</b> |              |                               |                    |                              | <b>433.2</b>                    |

Table e8 Free distribution of vegetable seed packs, October 1995 to July 1997

| District         | Beneficiaries |        |
|------------------|---------------|--------|
|                  | Male          | Female |
| 1. Gulja         | 239           | 1399   |
| 2. Mabalane      | 511           | 1532   |
| 3. Chicualacuala | 683           | 1336   |
| 4. Massangena    | 216           | 304    |
| TOTAL            | 1649          | 4571   |



## Appendix F. End of Project Survey

## **Appendix F. End of project survey**

### **1.BACKGROUND:**

World Relief Corporation (WRC) is an implementing agent of an Agricultural Livestock recovery and development program which extends from October 1995 to September 1997

The area covered by the program is situated along the Limpopo Corridor of the Northern Gaza Province in the Districts of Guija, Mabalane, Chicualacuala and Massangena.

The objective of the program is to improve the income and food security of communities in the target area.

The objective of the surveys is to facilitate assessment of impact of project activities. The first baseline survey was conducted in August and September 1995 when a pilot project was initiated at M'puzi and Combomune and this was followed by the main baseline survey conducted in June and July 1996. The end-of-project status survey was conducted during the months of June and July 1997.

### **2. METHODOLOGY:**

The surveys were conducted by WRC Agricultural Extensioners at the villages where their main operational activities are based. These villages are those where the Extensioners are stationed as well as adjacent ones.

Although an attempt was made to cover at least 10 per cent of the families in the villages surveyed there were few villages where this did not happen.

Information regarding the villages surveyed are presented in Tables 1a and 1b.

The questionnaire was written in Portuguese for the Extensioners but it was administered in Shangaan. A copy of the Portuguese questionnaire and the English translation are found in Appendixes 1 and 2 respectively.

For purposes of presentation of the survey results the villages under one Extensioner were treated as an entity, i.e. presented as an aggregate.

Table 1 Total households and sampling for both the Baseline (BLS) and End of Project Surveys (EPSS).

| Date of BL | District               | Villages              | Total of Households | BL Sample | Date of | Total of Households | EPSS Sample |
|------------|------------------------|-----------------------|---------------------|-----------|---------|---------------------|-------------|
| 6/96       | GULJA AREA 1           | 1 Acordo de Lusaka    | 1066                | 20        | 6/97    | 1317                | 55          |
|            |                        | 2. Sifo               | 518                 | 16        |         | 774                 | 29          |
|            |                        | 3 Chibabel            | 607                 | 15        |         | 1110                | 32          |
| 6/96       | AREA 2                 | 1. Chibvonguene       | 348                 | 12        | 6/97    | 436                 | 20          |
|            |                        | 2. Nhangunguene       | 328                 | 18        |         | 328                 | 20          |
|            |                        | 3 Dzandzane           | 202                 | 20        |         | 229                 | 12          |
| 6/96       | AREA 3                 | 1 Chinhacanne         | 613                 | 30        | 6/97    | 613                 | 32          |
|            |                        | 2 Ndonga              | 668                 | 20        |         | 929                 | 35          |
| 7/96       | MABALANE AREA 4.       | 1 Tsocate             | 398                 | 41        | 6/97    | 253                 | 30          |
|            |                        | 2. Covele             | 112                 | 9         |         | 120                 | 11          |
| 6/96       | AREA 5                 | 1 Matidze             | 95                  | 30        | 6/97    | 96                  | 20          |
|            |                        | 2. Zona 8             | 49                  | 10        |         | 49                  | 8           |
|            |                        | 3 Zona 9              | 25                  | 6         |         | 26                  | 6           |
| 6/96       | AREA 6                 | 1 Mabomo              | 106                 | 14        | 6/97    | 106                 | 10          |
|            |                        | 2 Chupsane            | 141                 | 21        |         | 148                 | 11          |
|            |                        | 3 Hoyo-hoyo           | 132                 | 10        |         | 303                 | 10          |
| 6/96       | CHICUALACUALA AREA 7   | 1 Buela               | 103                 | 25        | 6/97    | 109                 | 15          |
|            |                        | 2. Chulemane          | 119                 | 25        |         | 87                  | 15          |
| 6/96       | AREA 8                 | 1 Ndombe              | 177                 | 20        | 6/97    | 135                 | 15          |
|            |                        | 2. Muzamane           | 72                  | 17        |         | 71                  | 10          |
|            |                        | 3. Chissapa           | 121                 | 12        |         | 121                 | 8           |
| 6/96       | AREA 9.                | 1 Chicualacuala Rio   | 147                 | 20        | 6/97    | 147                 | 15          |
|            |                        | 2. Macassane          | 84                  | 21        |         | 84                  | 10          |
|            |                        | 3 Bacanha-mandla      | 76                  | 9         |         | 76                  | 10          |
| 6/96       | MASSANGENA AREA 10     | 1 Siqueto             | 249                 | 25        | 6/97    | 200                 | 15          |
|            |                        | 2. Mucambene          | 511                 | 25        |         | 446                 | 30          |
| 9/95       | MABALANE AREA 11       | 1 Combomune Rio       | 112                 | 11        | 6/97    | 207                 | 41          |
| 8/95       | CHICUALACUALA AREA 12. | 1 Mpuzi               | 131                 | 23        | 6/97    | 144                 | 40          |
|            |                        | TOTALS                | 7310                | 525       |         | 8664                | 565         |
|            |                        | % Population Increase |                     |           |         | 12                  |             |

### **3. RESULTS.**

#### **3.1. Mean flock/herd size.**

The mean flock/herd was calculated by dividing the number of animals of a particular livestock specie by the number of people who owned those animals

The mean flock/herd for goats, sheep and chickens is presented in Table 2a and for ducks, cattle and guinea pigs in Table 2b

#### **3.2. Livestock ownership.**

Percentage respondents owning goats is shown in Table 3a, those owning chickens and ducks in Table 3b and those owning sheep and guinea pigs in Table 3c.

#### **3.3. Respondents not owning livestock who owned it before.**

The percentage respondents presently not owning the livestock species but owned it before is given in Table 4a for goats, sheep and chickens, and Table 4b for ducks cattle and guinea pigs

#### **3.4. Access to extension/veterinary services.**

Tables 5a and 5b shows percentage respondents of owners of goats, sheep and chickens, and owners of ducks and cattle, respectively, who had access to extension and/or veterinary services in the past two months WRC extension services were not included in the baseline survey so as to be able to measure its impact at the end The baseline survey of Area 3 shows to have had good access to veterinary services This results from the fact that the respondents have a tendency of involving Government veterinary officers on their private capacity to treat their livestock on regular basis Besides, the figure also includes the annual Govt veterinary campaign for prevention of cattle against specific proclaimed diseases.

#### **3.5. Mortality rate.**

The mortality percentage (MP) for each livestock species for the past 12 months was calculated as follows:

$$MP = \frac{\text{Total deaths}}{\text{Current total} + \text{deaths} + \text{sold} + \text{bartered} + \text{slaughtered}} \times 100$$

The mortality percentages are given in Tables 6a and 6b respectively for goats and sheep, and for chickens and ducks According to the tables the mortality rates for the baseline survey for chickens at Area 8 and Area 9 are substantially lower than the other Areas This results from the fact that at the beginning of an outbreak of a disease (usually Newcastle Disease) the chicken owners sell most of their chickens at the stations along the railway line

#### **3.6. Offtake percentage.**

By offtake is meant those animals which are disposed of by way of selling (bartering included) and slaughterings.

The offtake percentage (OP) for the past 12 months was calculated as follows:

$$OP = \frac{\text{Sold} + \text{bartered} + \text{slaughtered}}{\text{Current total} + \text{deaths} + \text{sold} + \text{bartered} + \text{slaughtered}} \times 100$$

Tables 7a and 7b depict the offtake percentages of goats and sheep, and chickens and ducks respectively

Under normal circumstances the offtake rates for goats are low. The higher percentages for Area 6 and Area 7 for baseline survey were due to the fact that there was scarcity of staple food (maize mostly) and as a result people sold their goats in order to buy food or bartered them for food or other essential household goods

### 3.7. Meat consumption.

Average consumption (number of times eaten) of meat for the past two months is given in Table 8a for goat and mutton; and Table 8b for chicken and duck

The figures were obtained by dividing the number of times the meat of a particular livestock specie was eaten by the number of respondents

Area 6 which in the baseline survey according to the tables reflect a higher rate of meat consumption emanates from the fact that people were eating meat of livestock which died or about to die from one or other cause, e.g. chickens from Newcastle Disease and ducks from Pasteurellosis. Same applies to chicken consumption at Area 1

### 3.8. Livestock husbandry practices.

Percentage respondents involved in different husbandry practices in the past 12 months are given in Tables 9 1a, 9 1b, 9 2, 9 3, 9 4, 9 5 and 9 6

Table 9 1a. shows the percentage respondents involved in disease treatment/prophylaxis of goats and sheep whereas that of chickens and ducks is shown in Table 9 1b

Table 9.2 shows the percentage respondents involved in external parasite control of goats and sheep.

Table 9 3 shows the percentage respondents involved in internal parasites control of goats and sheep.

The respondents that Tables 9 1a, 9 2 and 9 3 depict in the baseline survey as being involved in the practices usually make use of veterinary technicians on their private capacity to treat their livestock

Table 9 4. shows the percentage respondents involved in practice of castration of their goats and sheep

Table 9 5 shows the percentage respondents involved in the practice of culling of goats and sheep

Table 9 6 shows the percentage respondents involved in supplementary feeding of goats and sheep.

### 3.9. Goat fertility.

The fertility percentage (FP) for goats for the past 12 months was calculated as follows

$$FP = \frac{\text{Ewes which gave birth}}{\text{Ewes > 1 year}} \times 100$$

The fertility percentage is depicted in Table 10

**3.10. Twinning rate for goats.**

The twinning percentage (TP) for goats for the past 12 months was calculated as follows

$$TP = \frac{\text{Ewes which gave birth to twins} \times 100}{\text{Ewes which gave birth}}$$

The twinning percentage is depicted in Table 11

**3.11. Kidding/lambing percentage.**

It is the number of kids/lambs born per doe/ewe mated

The kidding/lambing percentage (K/LP) for goats and sheep for the past 12 months was calculated as follows

$$K/LP = \frac{\text{Kids/lambs born past 12 months} \times 100}{\text{Doe/ewe} > 1 \text{ year}}$$

The kidding/lambing percentage is shown in Table 12

**3.12. Fecundity.**

It is the number of kids/lambs born per doe/ewe kidded/lambled It was calculated as follows

$$F = \frac{\text{Kids/lambs born past 12 months}}{\text{Does/ewes which gave birth}}$$

Table 13 shows the fecundity for goats and sheep for the past 12 months

Table 2a: The mean flock/herd size for goats, sheep and chickens

|   | Goats |      | Sheep |      | Chickens |      |
|---|-------|------|-------|------|----------|------|
|   | BLS   | EPSS | BLS   | EPSS | BLS      | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 6     | 6    | 5     | 5    | 8        | 15   |
| AREA 2. (Chibvongone, Nhapunguane, Dzandzine)         | 5     | 9    | 2     | 6    | 4        | 20   |
| AREA 3. (Chinhacanne, Ndonga)                         | 8     | 6    | 12    | 3    | 13       | 13   |
| AREA 4. (Tsocate, Covele)                             | 11    | 14   | 4     | 4    | 7        | 15   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 13    | 20   | 9     | 10   | 8        | 17   |
| AREA 6. (Mabomo, Chipiane, Hoyo-hoyo)                 | 9     | 13   | 8     | 17   | 6        | 13   |
| AREA 7. (Buela, Chilemane)                            | 26    | 25   | 11    | 9    | 17       | 17   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 13    | 18   | 9     | 12   | 15       | 9    |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 12    | 19   | 13    | 26   | 19       | 24   |
| AREA 10. (Siqueto, Muca-mbene)                        | 8     | 17   | 12    | 6    | 14       | 13   |
| AREA 11. (Combonane Rio)                              | 22    | 15   | 10    | 8    | 5        | 13   |
| AREA 12. (Mpuzi)                                      | 20    | 19   | 8     | 10   | 11       | 12   |
| Overall Mean of Sample                                | 13    | 15   | 9     | 10   | 11       | 15   |
| % Increase  |       | 15   |       | 11   |          | 36   |

Table 2b: The mean flock/herd size for ducks, cattle and guinea pigs

|   | Ducks |      | Cattle |      | Guinea Pigs |      |
|---|-------|------|--------|------|-------------|------|
|   | BLS   | EPSS | BLS    | EPSS | BLS         | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 3     | 1    | 6      | 6    | 2           | 8    |
| AREA 2. (Chibvongone, Nhapunguane, Dzandzine)         | 4     | 7    | 5      | 4    | 15          | 12   |
| AREA 3. (Chinhacanne, Ndonga)                         | 6     | 6    | 5      | 4    | 10          | 10   |
| AREA 4. (Tsocate, Covele)                             | 18    | 5    | 7      | 5    | 7           | 13   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 7     | 3    | 7      | 9    | 9           | 8    |
| AREA 6. (Mabomo, Chipiane, Hoyo-hoyo)                 | 5     | 7    | 9      | 11   | 0           | 6    |
| AREA 7. (Buela, Chilemane)                            | 6     | 7    | 28     | 17   | 2           | 5    |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 6     | 6    | 17     | 17   | 0           | 3    |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 5     | 7    | 10     | 10   | 0           | 7    |
| AREA 10. (Siqueto, Muca-mbene)                        | 6     | 7    | 9      | 17   | 5           | 8    |
| AREA 11. (Combonane Rio)                              | 5     | 5    | 9      | 8    | 0           | 8    |
| AREA 12. (Mpuzi)                                      | 4     | 7    | 14     | 9    | 0           | 5    |
| Overall Mean of Sample                                | 6     | 6    | 11     | 10   | 4           | 8    |
| % Increase  |       | 0    |        | -9   |             | 100  |

Table 3a Percentage Goat Ownership

| DISTRICT<br>Village          | % Goat Ownership |           |
|------------------------------|------------------|-----------|
|                              | BLS              | EPSS      |
| <b>AREA 1. GULJA</b>         | <b>21</b>        | <b>13</b> |
| 1. Acordos de Lusaka         | 20               | 15        |
| 2. Sifo                      | 13               | 14        |
| 3. Chibabel                  | 31               | 11        |
| <b>AREA 2.</b>               | <b>15</b>        | <b>67</b> |
| 1. Chibvongone               | 21               | 66        |
| 2. Nhapunguane               | 9                | 81        |
| 3. Dzandzine                 | 16               | 55        |
| <b>AREA 3.</b>               | <b>26</b>        | <b>27</b> |
| 1. Chinhacanne               | 31               | 37        |
| 2. Ndonga                    | 22               | 16        |
| <b>AREA 4. MABALANE</b>      | <b>51</b>        | <b>31</b> |
| 1. Tsocate                   | 60               | 40        |
| 2. Covele                    | 19               | 22        |
| <b>AREA 5.</b>               | <b>61</b>        | <b>65</b> |
| 1. Matudze                   | 65               | 65        |
| 2. Zona 8                    | 65               | 76        |
| 3. Zona 9                    | 36               | 54        |
| <b>AREA 6.</b>               | <b>52</b>        | <b>37</b> |
| 1. Mabomo                    | 63               | 54        |
| 2. Chipsane                  | 43               | 32        |
| 3. Hoyo-hoyo                 | 52               | 26        |
| <b>AREA 7. CHICUALACUALA</b> | <b>32</b>        | <b>44</b> |
| 1. Buela                     | 26               | 26        |
| 2. Chilemane                 | 38               | 62        |
| <b>AREA 8.</b>               | <b>23</b>        | <b>35</b> |
| 1. Ndombe                    | 18               | 31        |
| 2. Muzamane                  | 43               | 48        |
| 3. Chissapa                  | 14               | 26        |



Table 3a Continued Percentage Goat Ownership

| DISTRICT<br>Village           | % Goat Ownership |      |
|-------------------------------|------------------|------|
|                               | BLS              | EPSS |
| <b>AREA 9.</b>                | 15               | 55   |
| 1. Chicualacuala Rio          | 13               | 54   |
| 2 Macassane                   | 19               | 43   |
| 3 Bacanha-mandla              | 16               | 67   |
| <b>AREA 10. MASSANGENA</b>    | 6                | 9    |
| 1 Siqueto                     | 6                | 14   |
| 2 Mucambene                   | 5                | 3    |
| <b>AREA 11. MABALANE</b>      | 49               | 47   |
| 1 Combomune Rio               | 49               | 47   |
| <b>AREA 12. CHICUALACUALA</b> | 34               | 65   |
| 1 Mpuzi                       | 34               | 65   |
| <b>Mean %</b>                 | 25               | 29   |
| <b>% Increase</b>             |                  | 4    |

Table 3b Percentage respondents owning chickens and ducks

|   | Chickens % |      | Ducks % |      |
|---|------------|------|---------|------|
|   | BLS        | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 80         | 87   | 37      | 64   |
| AREA 2. (Chibvongone, Nhapunguane, Dzindzane)         | 78         | 96   | 54      | 85   |
| AREA 3. (Chinhacanne, Ndonga)                         | 62         | 67   | 74      | 57   |
| AREA 4. (Tsocate, Covele)                             | 72         | 88   | 12      | 56   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 61         | 88   | 50      | 44   |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 69         | 77   | 69      | 48   |
| AREA 7. (Burela, Chulemane)                           | 78         | 87   | 54      | 63   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 90         | 94   | 49      | 64   |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 94         | 94   | 50      | 57   |
| AREA 10. (Siqueto, Muca- mbene)                       | 78         | 91   | 56      | 60   |
| AREA 11. (Combonune Rio)                              | 64         | 98   | 73      | 80   |
| AREA 12. (Mpuzi)                                      | 52         | 98   | 30      | 60   |
| Mean %  | 75         | 88   | 50      | 62   |
| % Increase  |            | 13   |         | 12   |

Table 3c Percentage respondents owning sheep and guinea pigs

|   | Sheep % |      | Guinea Pigs % |      |
|---|---------|------|---------------|------|
|   | BLS     | EPSS | BLS           | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 33      | 21   | 2             | 14   |
| AREA 2. (Chibvongone, Nhapunguane, Dzindzane)         | 4       | 35   | 10            | 52   |
| AREA 3. (Chinhacanne, Ndonga)                         | 8       | 7    | 10            | 12   |
| AREA 4. (Tsocate, Covele)                             | 20      | 27   | 28            | 34   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 13      | 12   | 11            | 32   |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 4       | 23   | 0             | 13   |
| AREA 7. (Burela, Chulemane)                           | 30      | 27   | 12            | 17   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 14      | 12   | 0             | 12   |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 16      | 14   | 0             | 6    |
| AREA 10. (Siqueto, Muca- mbene)                       | 12      | 9    | 24            | 13   |
| AREA 11. (Combonune Rio)                              | 9       | 15   | 0             | 15   |
| AREA 12. (Mpuzi)                                      | 26      | 28   | 0             | 50   |
| Mean %  | 16      | 19   | 9             | 22   |
| % Increase  |         | 3    |               | 13   |

Table 4a Percentage without goats, sheep and chickens who previously owned them

|   | Goats % |      | Sheep % |      | Chickens % |      |
|---|---------|------|---------|------|------------|------|
|   | BLS     | EPSS | BLS     | EPSS | BLS        | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 67      | 67   | 18      | 26   | 90         | 93   |
| AREA 2. (Chibvongoene, Nhapunguane, Dzmdzne)          | 83      | 78   | 27      | 47   | 100        | 50   |
| AREA 3. (Chinhacanne, Ndonga)                         | 47      | 30   | 17      | 3    | 32         | 41   |
| AREA 4. (Tsocate, Covele)                             | 0       | 100  | 65      | 30   | 100        | 80   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 40      | 100  | 11      | 50   | 100        | 100  |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 75      | 67   | 23      | 25   | 100        | 71   |
| AREA 7. (Buela, Chilemane)                            | 30      | 71   | 37      | 32   | 100        | 100  |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 67      | 36   | 14      | 28   | 89         | 100  |
| AREA 9. (Chicalaquala Rio, Macassane, Bacanha-mandla) | 38      | 89   | 0       | 33   | 33         | 100  |
| AREA 10. (Siqueto, Muca-mbene)                        | 79      | 43   | 36      | 15   | 91         | 100  |
| AREA 11. (Combomune Rio)                              | 100     | 38   | 20      | 34   | 100        | 100  |
| AREA 12. (Mpuzi)                                      | 100     | 100  | 35      | 72   | 92         | 100  |

Table 4b Percentage without ducks, cattle or guinea pigs who previously owned them

|   | Ducks % |      | Cattle % |      | Guinea Pigs % |      |
|---|---------|------|----------|------|---------------|------|
|   | BLS     | EPSS | BLS      | EPSS | BLS           | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 59      | 57   | 50       | 66   | 0             | 6    |
| AREA 2. (Chibvongoene, Nhapunguane, Dzmdzne)          | 52      | 50   | 91       | 80   | 7             | 24   |
| AREA 3. (Chinhacanne, Ndonga)                         | 31      | 45   | 54       | 22   | 0             | 0    |
| AREA 4. (Tsocate, Covele)                             | 52      | 67   | 75       | 81   | 0             | 7    |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 74      | 74   | 0        | 78   | 0             | 26   |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 29      | 25   | 82       | 57   | 0             | 0    |
| AREA 7. (Buela, Chilemane)                            | 26      | 27   | 62       | 42   | 0             | 8    |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 48      | 58   | 28       | 64   | 0             | 7    |
| AREA 9. (Chicalaquala Rio, Macassane, Bacanha-mandla) | 4       | 47   | 16       | 89   | 0             | 6    |
| AREA 10. (Siqueto, Muca-mbene)                        | 27      | 6    | 53       | 34   | 13            | 0    |
| AREA 11. (Combomune Rio)                              | 33      | 50   | 66       | 78   | 0             | 46   |
| AREA 12. (Mpuzi)                                      | 44      | 94   | 17       | 75   | 0             | 25   |

Table 5a Percentage with goats, sheep and chickens with access to extension/veterinary services in the previous two months.

|   | Goats % |      | Sheep % |      | Chickens % |      |
|---|---------|------|---------|------|------------|------|
|   | BLS     | EPSS | BLS     | EPSS | BLS        | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 0       | 33   | 0       | 50   | 0          | 36   |
| AREA 2. (Chibvongone, Nhapunguane, Dzindzine)         | 0       | 63   | 0       | 67   | 0          | 96   |
| AREA 3. (Chinhacanne, Ndonga)                         | 24      | 68   | 25      | 60   | 0          | 84   |
| AREA 4.(Tsocate, Covele)                              | 0       | 53   | 0       | 55   | 0          | 61   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 0       | 75   | 0       | 25   | 0          | 83   |
| AREA 6. (Mabomo, Chipene, Hoyo-hoyo)                  | 0       | 86   | 0       | 100  | 0          | 100  |
| AREA 7. (Buela, Chilemane)                            | 0       | 57   | 0       | 75   | 0          | 62   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 0       | 73   | 0       | 100  | 0          | 68   |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 0       | 19   | 0       | 20   | 0          | 42   |
| AREA 10. (Siqueto, Muca-mbene)                        | 0       | 60   | 0       | 25   | 0          | 20   |
| AREA 11. (Combomune Rio)                              | 0       | 42   | 0       | 67   | 0          | 75   |
| AREA 12. (Mpuzi)                                      | 0       | 66   | 0       | 100  | 0          | 97   |
| Mean %  | 3       | 55   | 1       | 64   | 0          | 65   |
| % Increase  |         | 52   |         | 63   |            | 65   |

Table 5b. Percentage of owners of ducks and cattle with access to extension/veterinary services in the last two months

|   | % Ducks |      | % Cattle |      |
|---|---------|------|----------|------|
|   | BLS     | EPSS | BLS      | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 0       | 11   | 0        | 38   |
| AREA 2. (Chibvongone, Nhapunguane, Dzindzine)         | 0       | 0    | 0        | 15   |
| AREA 3. (Chinhacanne, Ndonga)                         | 0       | 0    | 78       | 100  |
| AREA 4.(Tsocate, Covele)                              | 0       | 0    | 0        | 0    |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 0       | 0    | 0        | 4    |
| AREA 6. (Mabomo, Chipene, Hoyo-hoyo)                  | 0       | 0    | 0        | 54   |
| AREA 7. (Buela, Chilemane)                            | 0       | 0    | 0        | 0    |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 0       | 0    | 0        | 0    |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 0       | 0    | 0        | 0    |
| AREA 10. (Siqueto, Muca-mbene)                        | 0       | 0    | 0        | 43   |
| AREA 11. (Combomune Rio)                              | 0       | 0    | 100      | 5    |
| AREA 12. (Mpuzi)                                      | 0       | 13   | 100      | 19   |
| Mean %  | 0       | 3    | 15       | 25   |
| % Increase  |         | 3    |          | 10   |

Table 6a: Percentage mortality for goats and sheep during the past 12 months.

|   | % Goats |      | % Sheep |      |
|---|---------|------|---------|------|
|   | BLS     | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 42      | 34   | 40      | 39   |
| AREA 2. (Chibvongone, Nhapunguane, Dzandzane)         | 34      | 8    | 43      | 5    |
| AREA 3. (Chinhacame, Ndonga)                          | 35      | 28   | 56      | 6    |
| AREA 4. (Tsocate, Covele)                             | 18      | 18   | 33      | 18   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 35      | 12   | 22      | 5    |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 45      | 39   | 54      | 40   |
| AREA 7. (Buiela, Chilemane)                           | 17      | 14   | 35      | 17   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 69      | 11   | 0       | 2    |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 10      | 18   | 3       | 3    |
| AREA 10. (Siqueto, Muca-mbene)                        | 6       | 7    | 11      | 4    |
| AREA 11. (Combomane Rio)                              | 15      | 11   | 9       | 0    |
| AREA 12. (Mpuzi)                                      | 21      | 9    | 21      | 2    |
| Mean %  | 27      | 16   | 25      | 15   |
| % Increase  |         | -11  |         | -10  |

Table 6b: Percentage mortality for chickens and ducks for the past 12 months.

|   | % Chickens |      | % Ducks |      |
|---|------------|------|---------|------|
|   | BLS        | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 57         | 33   | 71      | 64   |
| AREA 2. (Chibvongone, Nhapunguane, Dzandzane)         | 79         | 18   | 31      | 18   |
| AREA 3. (Chinhacame, Ndonga)                          | 40         | 16   | 16      | 50   |
| AREA 4. (Tsocate, Covele)                             | 43         | 23   | 21      | 17   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 38         | 12   | 54      | 43   |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 74         | 34   | 29      | 10   |
| AREA 7. (Buiela, Chilemane)                           | 52         | 29   | 35      | 19   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 24         | 17   | 35      | 1    |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 25         | 31   | 11      | 26   |
| AREA 10. (Siqueto, Muca-mbene)                        | 62         | 23   | 36      | 4    |
| AREA 11. (Combomane Rio)                              | 66         | 18   | 37      | 31   |
| AREA 12. (Mpuzi)                                      | 60         | 17   | 27      | 12   |
| Mean %  | 44         | 24   | 32      | 23   |
| % Increase  |            | 20   |         | 9    |

Table 7a Offtake percentage for goats and sheep for the past 12 months

|   | % Goats |      | % Sheep |      |
|---|---------|------|---------|------|
|   | BLS     | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 12      | 11   | 6       | 10   |
| AREA 2. (Chibvongoene, Nhapunguane, Dzandzine)        | 4       | 8    | 0       | 4    |
| AREA 3. (Chinhacanne, Ndonga)                         | 2       | 5    | 0       | 0    |
| AREA 4. (Tsocate, Covele)                             | 11      | 9    | 9       | 10   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 5       | 14   | 1       | 0    |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 15      | 4    | 9       | 4    |
| AREA 7. (Buiela, Chulemane)                           | 14      | 16   | 11      | 10   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 2       | 11   | 0       | 0    |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 5       | 10   | 6       | 0    |
| AREA 10. (Siqueto, Muca- mbene)                       | 8       | 8    | 7       | 4    |
| AREA 11. (Combomune Rio)                              | 10      | 8    | 0       | 2    |
| AREA 12. (Mpuzi)                                      | 9       | 11   | 8       | 8    |
| Mean %  | 9       | 10   | 6       | 5    |
| % Increase  |         | 1    |         | -1   |

Table 7b Offtake percentage for chickens and ducks for the past 12 months

|   | % Chickens |      | % Ducks |      |
|---|------------|------|---------|------|
|   | BLS        | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 19         | 17   | 20      | 26   |
| AREA 2. (Chibvongoene, Nhapunguane, Dzandzine)        | 4          | 16   | 6       | 9    |
| AREA 3. (Chinhacanne, Ndonga)                         | 0          | 5    | 0       | 3    |
| AREA 4. (Tsocate, Covele)                             | 10         | 17   | 6       | 5    |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 7          | 18   | 7       | 21   |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 7          | 18   | 7       | 24   |
| AREA 7. (Buiela, Chulemane)                           | 17         | 23   | 16      | 22   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 14         | 21   | 2       | 16   |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 12         | 28   | 3       | 14   |
| AREA 10. (Siqueto, Muca- mbene)                       | 5          | 21   | 9       | 18   |
| AREA 11. (Combomune Rio)                              | 27         | 19   | 10      | 19   |
| AREA 12. (Mpuzi)                                      | 9          | 29   | 30      | 32   |
| Mean %  | 11         | 19   | 49      | 16   |
| % Increase  |            | 8    |         | -33  |

Table 8a Average meat consumption of goat and mutton (number of times eaten) in the past two months

|   | Goat |      | Mutton |      |
|---|------|------|--------|------|
|   | BLS  | EPSS | BLS    | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 1    | 1    | 0      | 0    |
| AREA 2. (Chibvongone, Nhapunguane, Dzindzine)         | 0    | 0    | 0      | 0    |
| AREA 3. (Chinhacanne, Ndonga)                         | 1    | 1    | 0      | 0    |
| AREA 4. (Tsocate, Covele)                             | 1    | 1    | 0      | 0    |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 0    | 0    | 0      | 0    |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 5    | 2    | 0      | 1    |
| AREA 7. (Buela, Chulemane)                            | 1    | 0    | 0      | 0    |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 0    | 1    | 0      | 0    |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 0    | 0    | 0      | 0    |
| AREA 10. (Siqueto, Muca-mbene)                        | 0    | 1    | 0      | 0    |
| AREA 11. (Combomune Rio)                              | 2    | 1    | 0      | 0    |
| AREA 12. (Mpuzi)                                      | 3    | 1    | 0      | 0    |
| Mean %  | 1.17 | 0.75 | 0      | 0.08 |
| % Increase  |      | -36  |        | 8    |

Table 8b Respondents' average meat consumption of chicken and duck (number of times eaten) in the past two months

|   | Chicken |      | Ducks |      |
|---|---------|------|-------|------|
|   | BLS     | EPSS | BLS   | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 5       | 3    | 2     | 1    |
| AREA 2. (Chibvongone, Nhapunguane, Dzindzine)         | 1       | 3    | 0     | 0    |
| AREA 3. (Chinhacanne, Ndonga)                         | 0       | 1    | 0     | 1    |
| AREA 4. (Tsocate, Covele)                             | 1       | 1    | 0     | 0    |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 0       | 1    | 0     | 0    |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 4       | 4    | 4     | 1    |
| AREA 7. (Buela, Chulemane)                            | 2       | 3    | 0     | 1    |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 1       | 2    | 0     | 0    |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 1       | 2    | 0     | 0    |
| AREA 10. (Siqueto, Muca-mbene)                        | 2       | 3    | 0     | 1    |
| AREA 11. (Combomune Rio)                              | 3       | 2    | 1     | 1    |
| AREA 12. (Mpuzi)                                      | 0       | 2    | 0     | 1    |
| Mean %  | 1.66    | 2.25 | 0.58  | 0.58 |
| % Increase  |         | 36   |       | 0    |

Table 9 1a. Percentage of respondents involved in disease treatment/prophylaxis of goats and sheep in the past 12 months

|   | % Goats |      | % Sheep |      |
|---|---------|------|---------|------|
|   | BLS     | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 0       | 29   | 0       | 50   |
| AREA 2. (Chibvongone, Nhapunguane, Dzindzine)         | 0       | 65   | 0       | 44   |
| AREA 3. (Chinhacanne, Ndonga)                         | 30      | 78   | 0       | 60   |
| AREA 4.(Tsocate, Covele)                              | 0       | 53   | 0       | 45   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 0       | 88   | 0       | 75   |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 0       | 86   | 0       | 100  |
| AREA 7. (Buela, Chulemane)                            | 0       | 57   | 0       | 88   |
| AREA 8. (Ndombe, Muzamane, Chussapa)                  | 3       | 82   | 0       | 100  |
| AREA 9. (Chicalaquala Rio, Macassane, Bacanha-mandla) | 0       | 19   | 0       | 20   |
| AREA 10. (Siqueto, Muca-mbene)                        | 0       | 50   | 0       | 75   |
| AREA 11. (Combomune Rio)                              | 0       | 45   | 0       | 67   |
| AREA 12. (Mpuzi)                                      | 22      | 89   | 20      | 91   |
| Mean %  | 5       | 59   | 4       | 63   |
| % Increase  |         | 54   |         | 59   |

Table 9 1b Percentage respondents involved in disease treatment/prophylaxis of chickens and ducks in the past 12 months

|   | % Chickens |      | % Ducks |      |
|---|------------|------|---------|------|
|   | BLS        | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 0          | 26   | 0       | 0    |
| AREA 2. (Chibvongone, Nhapunguane, Dzindzine)         | 0          | 100  | 0       | 0    |
| AREA 3. (Chinhacanne, Ndonga)                         | 0          | 89   | 0       | 0    |
| AREA 4.(Tsocate, Covele)                              | 0          | 53   | 0       | 0    |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 0          | 93   | 0       | 0    |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 0          | 96   | 0       | 0    |
| AREA 7. (Buela, Chulemane)                            | 0          | 65   | 0       | 0    |
| AREA 8. (Ndombe, Muzamane, Chussapa)                  | 0          | 71   | 0       | 0    |
| AREA 9. (Chicalaquala Rio, Macassane, Bacanha-mandla) | 0          | 39   | 0       | 0    |
| AREA 10. (Siqueto, Muca-mbene)                        | 0          | 15   | 0       | 4    |
| AREA 11. (Combomune Rio)                              | 0          | 53   | 0       | 0    |
| AREA 12. (Mpuzi)                                      | 0          | 87   | 0       | 54   |
| Mean %  | 0          | 60   | 0       | 4    |
| % Increase  |            | 60   |         | 4    |

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Table 9 2 Percentage involved in external parasite control for goats and sheep in the past 12 months

|   | % Goats |      | % Sheep |      |
|---|---------|------|---------|------|
|   | BLS     | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 0       | 33   | 0       | 46   |
| AREA 2. (Chibvongone, Nhapunguane, Dzandzine)         | 0       | 53   | 0       | 50   |
| AREA 3. (Chinhacanne, Ndonga)                         | 24      | 78   | 0       | 60   |
| AREA 4. (Tsocate, Covele)                             | 0       | 55   | 0       | 55   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 0       | 72   | 0       | 75   |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 0       | 82   | 0       | 86   |
| AREA 7. (Buela, Chilamane)                            | 0       | 57   | 0       | 88   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 0       | 64   | 0       | 75   |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 0       | 15   | 0       | 20   |
| AREA 10. (Siqueto, Muca-mbene)                        | 0       | 40   | 0       | 50   |
| AREA 11. (Combomane Rio)                              | 0       | 45   | 6       | 67   |
| AREA 12. (Mpuzi)                                      | 6       | 89   | 86      | 91   |
| Mean %  | 8       | 56   | 9       | 61   |
| % Increase  |         | 48   |         | 52   |

Table 9 3: Percentage respondents involved in control of internal parasites in goats and sheep in the past 12 months

|   | BLS | EPSS | BLS | EPSS |
|---|-----|------|-----|------|
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 0   | 33   | 0   | 50   |
| AREA 2. (Chibvongone, Nhapunguane, Dzandzine)         | 0   | 44   | 0   | 50   |
| AREA 3. (Chinhacanne, Ndonga)                         | 24  | 78   | 50  | 60   |
| AREA 4. (Tsocate, Covele)                             | 0   | 55   | 0   | 55   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 0   | 81   | 0   | 75   |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 0   | 91   | 0   | 100  |
| AREA 7. (Buela, Chilamane)                            | 0   | 57   | 0   | 88   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 0   | 73   | 0   | 75   |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 0   | 19   | 0   | 20   |
| AREA 10. (Siqueto, Muca-mbene)                        | 0   | 50   | 0   | 50   |
| AREA 11. (Combomane Rio)                              | 0   | 45   | 0   | 67   |
| AREA 12. (Mpuzi)                                      | 0   | 89   | 0   | 91   |
| Mean %  | 3   | 58   | 2   | 63   |
| % Increase  |     | 55   |     | 61   |

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Table 9.4 Percentage respondents involved in the practice of castration of goats and sheep in the past 12 months

|   | % Goats |      | % Sheep |      |
|---|---------|------|---------|------|
|   | BLS     | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 0       | 0    | 0       | 0    |
| AREA 2. (Chitvongone, Nhapunguane, Dzandzine)         | 0       | 5    | 0       | 0    |
| AREA 3. (Chinhacanne, Ndonga)                         | 9       | 0    | 0       | 0    |
| AREA 4. (Tsocate, Covele)                             | 64      | 8    | 0       | 0    |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 11      | 16   | 16      | 0    |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 0       | 0    | 0       | 0    |
| AREA 7. (Buiela, Chitemane)                           | 23      | 35   | 33      | 13   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 30      | 50   | 42      | 50   |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 19      | 31   | 24      | 20   |
| AREA 10. (Siqueto, Muca-mbene)                        | 75      | 60   | 65      | 75   |
| AREA 11. (Combomane Rio)                              | 22      | 27   | 0       | 0    |
| AREA 12. (Mpuzi)                                      | 19      | 76   | 25      | 55   |
| Mean %  | 21      | 20   | 19      | 12   |
| % Increase  |         | -1   |         | -7   |

Table 9.5 Percentage respondents involved in the practice of culling of goats and sheep in the past 12 months

|   | % Goats |      | % Sheep |      |
|---|---------|------|---------|------|
|   | BLS     | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 21      | 6    | 12      | 13   |
| AREA 2. (Chitvongone, Nhapunguane, Dzandzine)         | 0       | 12   | 0       | 0    |
| AREA 3. (Chinhacanne, Ndonga)                         | 6       | 0    | 0       | 0    |
| AREA 4. (Tsocate, Covele)                             | 14      | 13   | 0       | 0    |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 0       | 16   | 0       | 0    |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 8       | 32   | 0       | 43   |
| AREA 7. (Buiela, Chitemane)                           | 25      | 26   | 13      | 0    |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 6       | 73   | 14      | 100  |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 0       | 0    | 0       | 0    |
| AREA 10. (Siqueto, Muca-mbene)                        | 100     | 100  | 83      | 100  |
| AREA 11. (Combomane Rio)                              | 13      | 48   | 0       | 17   |
| AREA 12. (Mpuzi)                                      | 95      | 24   | 67      | 36   |
| Mean %  | 17      | 21   | 17      | 18   |
| % Increase  |         | 4    |         | 1    |

Table 9 6 Percentage respondents involved in supplementary feeding of goats and sheep in the past 12 months

|   | % Goats |      | % Sheep |      |
|---|---------|------|---------|------|
|   | BLS     | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 0       | 3    | 0       | 4    |
| AREA 2. (Chibvongoene, Nhapunguane, Dzindzine)        | 0       | 2    | 0       | 0    |
| AREA 3. (Chinhacanine, Ndonga)                        | 0       | 0    | 0       | 0    |
| AREA 4.(Tsocate, Covele)                              | 0       | 0    | 0       | 0    |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 0       | 0    | 0       | 0    |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 0       | 0    | 0       | 0    |
| AREA 7. (Bucla, Chitemane)                            | 0       | 0    | 0       | 0    |
| AREA 8. (Ndombe, Muzamane, Chussapa)                  | 0       | 0    | 0       | 0    |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 0       | 4    | 0       | 0    |
| AREA 10. (Siqueto, Muca- mbene)                       | 0       | 0    | 0       | 0    |
| AREA 11. (Combomane Rio)                              | 0       | 0    | 0       | 0    |
| AREA 12. (Mpuzi)                                      | 0       | 47   | 0       | 73   |
| Mean %  | 0       | 6    | 0       | 8    |
| % Increase  |         | 6    |         | 8    |

Table 10 The fertility percentage for goats for the past 12 months

|   | % Goat Fertility |      |
|---|------------------|------|
|   | BLS              | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 83               | 72   |
| AREA 2. (Chibvongoene, Nhapunguane, Dzindzine)        | 91               | 69   |
| AREA 3. (Chinhacanine, Ndonga)                        | 30               | 37   |
| AREA 4.(Tsocate, Covele)                              | 53               | 36   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 78               | 88   |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 89               | 66   |
| AREA 7. (Bucla, Chitemane)                            | 64               | 55   |
| AREA 8. (Ndombe, Muzamane, Chussapa)                  | 56               | 58   |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 73               | 90   |
| AREA 10. (Siqueto, Muca- mbene)                       | 69               | 45   |
| AREA 11. (Combomane Rio)                              | 87               | 74   |
| AREA 12. (Mpuzi)                                      | 92               | 49   |
| Mean %  | 70               | 61   |
| % Increase  |                  | -9   |

Table 11: The twinning percentage for goats for the past 12 months

|   | % Twinning |      |
|---|------------|------|
|   | BLS        | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 31         | 65   |
| AREA 2. (Chibvongoene, Nhapunguane, Dzandzine)        | 52         | 72   |
| AREA 3. (Chinhacanne, Ndonga)                         | 35         | 27   |
| AREA 4. (Tsocate, Covele)                             | 43         | 46   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 36         | 42   |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 41         | 49   |
| AREA 7. (Buela, Chilemane)                            | 53         | 56   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 27         | 53   |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 38         | 45   |
| AREA 10. (Siqueto, Muca-mbene)                        | 35         | 51   |
| AREA 11. (Combomane Rio)                              | 28         | 50   |
| AREA 12. (Mpuzi)                                      | 35         | 56   |
| Mean %  | 45         | 51   |
| % Increase  |            | 6    |

Table 12 Kidding/ lambing percentage of goats and sheep for the past 12 months

|   | % Goats |      | % Sheep |      |
|---|---------|------|---------|------|
|   | BLS     | EPSS | BLS     | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)          | 109     | 113  | 88      | 65   |
| AREA 2. (Chibvongoene, Nhapunguane, Dzandzine)        | 100     | 128  | -       | 65   |
| AREA 3. (Chinhacanne, Ndonga)                         | 54      | 57   | 100     | 20   |
| AREA 4. (Tsocate, Covele)                             | 75      | 55   | 31      | 18   |
| AREA 5. (Matidze, Zona 8, Zona 9)                     | 104     | 127  | 70      | 100  |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                 | 130     | 139  | 117     | 108  |
| AREA 7. (Buela, Chilemane)                            | 74      | 73   | 83      | 73   |
| AREA 8. (Ndombe, Muzamane, Chissapa)                  | 73      | 89   | 51      | 88   |
| AREA 9. (Chicalacuala Rio, Macassane, Bacanha-mandla) | 102     | 131  | 102     | 62   |
| AREA 10. (Siqueto, Muca-mbene)                        | 80      | 72   | 100     | 50   |
| AREA 11. (Combomane Rio)                              | 113     | 131  | 33      | 74   |
| AREA 12. (Mpuzi)                                      | 120     | 87   | 115     | 81   |
| Mean %  | 91      | 97   | 104     | 71   |
| % Increase  |         | 6    |         | -33  |

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Table 13 Fecundity for goats and sheep for the past 12 months

|  | Goats |      | Sheep |      |
|--|-------|------|-------|------|
|  | BLS   | EPSS | BLS   | EPSS |
| AREA 1. (Acordos de Lusa-ka, Sifo, Chibabel)           | 1.31  | 1.58 | 1.00  | 1.19 |
| AREA 2. (Chibvongone, Nhapunguane, Dzandzine)          | 1.10  | 1.85 | -     | 1.50 |
| AREA 3. (Chinhacame, Ndonga)                           | 1.80  | 1.54 | 1.90  | 1.00 |
| AREA 4. (Taocate, Covele)                              | 1.43  | 1.55 | 1.00  | 1.00 |
| AREA 5. (Matidze, Zona 8, Zona 9)                      | 1.20  | 1.44 | 1.00  | 1.30 |
| AREA 6. (Mabomo, Chipsane, Hoyo-hoyo)                  | 1.45  | 2.10 | 1.40  | 1.24 |
| AREA 7. (Buela, Chitemane)                             | 1.15  | 1.34 | 1.04  | 1.58 |
| AREA 8. (Ndombe, Muzamane, Chissapa)                   | 0.83  | 1.55 | 1.23  | 1.27 |
| AREA 9. (Chicualacuala Rio, Macassane, Bacanha-mandla) | 1.40  | 1.45 | 1.30  | 1.80 |
| AREA 10. (Siqueto, Muca-mbene)                         | 1.16  | 1.62 | 1.03  | 1.00 |
| AREA 11. (Combomune Rio)                               | 1.25  | 1.77 | 1.00  | 1.54 |
| AREA 12. (Mpuzi)                                       | 1.30  | 1.78 | 1.20  | 1.63 |
| Mean %   | 1.31  | 1.61 | 1.16  | 1.40 |
| % Increase   |       | 23   |       | 21   |

Table 14. Households producing their own seed and planting material for cool season vegetables

| District      | Households<br>Beginning of Project | Households<br>End of Project Status |
|---------------|------------------------------------|-------------------------------------|
| Gujja         | 35                                 | 137                                 |
| Mabalane      | 94                                 | 346                                 |
| Chicualacuala | 110                                | 752                                 |
| Massangena    | 26                                 | 82                                  |
| Totals        | 265                                | 1317                                |
| % Increase    |                                    | 397 %                               |

**Appendix G. July 1997 Project Monitoring Report**

## Appendix G. July 1997 Monthly Monitoring Report

WORLD RELIEF CORPORATION: MOZAMBIQUE  
(CHOKWE FIELD OFFICE)

### MONTHLY REPORT ON LIVESTOCK AND AGRICULTURAL ACTIVITIES: JULY 1997.

#### 1. GENERAL:

#### 2. RAINFALL:

The rainfall for the month was recorded as follows:

Chokwe = 19,1 mm, M'puzi = 0 mm; Combomune = 10 mm, Buiela = 0 mm and Massangena = 0 mm.

#### 3. VISITS AND MEETINGS:

#### 4. CHICKENS:

4.1. dozens of eggs from hens at Chokwe Transit Center were sold to WRC staff for 00 Mts.

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## 4 2. Chicken vaccinations against Newcastle Disease were conducted as follows:

| DISTRICT Village        | Chickens Vaccinated | Number of beneficiaries |             | Income mts.     |
|-------------------------|---------------------|-------------------------|-------------|-----------------|
|                         |                     | male                    | female      |                 |
| <b>GUIJA</b>            |                     |                         |             |                 |
| 1. Acordos de Lusaka    | 250                 | 7                       | 16          | 25 000          |
| 2. Chibabel             | 100                 | 3                       | 9           | 10 000          |
| 3. Sifo                 | 100                 | -                       | 6           | 10 000          |
| 4. 7 de Abril           | 70                  | 2                       | 3           | 7 000           |
| 5. Chinhacanine         | 435                 | 1                       | 35          | 43 500          |
| 6. Ndonga               | 104                 | -                       | 15          | 10 400          |
| 7. M'pelane             | 149                 | -                       | 21          | 14 900          |
|                         | 1208                | 13                      | 105         | 120 800         |
| <b>MABALANE</b>         |                     |                         |             |                 |
| 1. Covele               | 241                 | 8                       | 1           | 24 100          |
| 2. Tsocate              | 218                 | 3                       | 13          | 21 800          |
| 3. Zone 8               | 174                 | -                       | 11          | 17 400          |
|                         | 633                 | 11                      | 25          | 63 300          |
| <b>CHICUALACUALA</b>    |                     |                         |             |                 |
| 1. 16 de Junho          | 316                 | 5                       | 9           | 31 500          |
| 2. Chitemane            | 239                 | 6                       | 1           | 23 900          |
| 3. Bulela               | 83                  | 6                       | 4           | 8 300           |
| 4. Mapai                | 198                 | 2                       | 3           | 19 800          |
|                         | 836                 | 19                      | 17          | 83 500          |
| 1. Chokwe Transit Cntr  | 38                  | -                       | -           | -               |
| <b>GRAND TOTAL</b>      | <b>2714</b>         | <b>43</b>               | <b>147</b>  | <b>267 600</b>  |
| <b>PREVIOUS TOTAL</b>   | <b>37221</b>        | <b>1430</b>             | <b>2052</b> | <b>3024 200</b> |
| <b>CUMULATIVE TOTAL</b> | <b>39935</b>        | <b>1473</b>             | <b>2199</b> | <b>3291 800</b> |

## 4 3. Chickens treated against external parasites:

| DISTRICT Village      | CHICKENS TREATED | NUMBER OF BENEFICIARIES |           | INCOME Mts/m kind |
|-----------------------|------------------|-------------------------|-----------|-------------------|
|                       |                  | MALE                    | FEMALE    |                   |
| <b>CHICUALACUALA</b>  |                  |                         |           |                   |
| 1. Chicualacuala Rio  | 75               | 7                       | 2         | 7 500             |
| 2. Kunguma            | 55               | 5                       | 2         | 5 500             |
| 3. Ndombe Livst Cntr  | 17               | -                       | -         | -                 |
| <b>TOTAL</b>          | <b>147</b>       | <b>12</b>               | <b>4</b>  | <b>13 000</b>     |
| <b>PREVIOUS TOTAL</b> | <b>1460</b>      | <b>50</b>               | <b>82</b> | <b>162 700</b>    |

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|                  |      |    |    |                      |
|------------------|------|----|----|----------------------|
|                  |      |    |    | 1 chicken            |
| CUMULATIVE TOTAL | 1597 | 62 | 88 | 175 700<br>1 chicken |

## 4.4. The distribution of chickens was carried out as follows:

| DISTRICT<br>Village     | CHICKENS<br>DISTRIBUTED | NUMBER OF<br>BENEFICIARIES |        |
|-------------------------|-------------------------|----------------------------|--------|
|                         |                         | MALE                       | FEMALE |
| <b>GUJJA</b>            |                         |                            |        |
| 1. Acordos de Lusaka    | 73                      | -                          | 67     |
| 2. Chinhacanine         | 41                      | 1                          | 40     |
| 3. M'pelane             | 8                       | -                          | 8      |
| 4. Ndonga               | 31                      | -                          | 25     |
|                         | 153                     | 1                          | 140    |
| <b>MABALANE</b>         |                         |                            |        |
| 1. Tsocate              | 2                       | 1                          | -      |
| 2. Combomune            | 4                       | -                          | 4      |
| 3. Nhone                | 4                       | -                          | 4      |
| 4. Matidze              | 24                      | -                          | 18     |
|                         | 34                      | 1                          | 26     |
| <b>CHICUALACUALA</b>    |                         |                            |        |
| 1. Ndombe               | 24                      | 9                          | 6      |
| 2. M'puzi               | 28                      | -                          | 14     |
|                         | 52                      | 9                          | 20     |
| <b>MASSANGENA</b>       |                         |                            |        |
| 1. Mbocoda              | 2                       | 1                          | -      |
| <b>GRAND TOTAL</b>      | 241                     | 12                         | 166    |
| <b>PREVIOUS TOTAL</b>   | 525                     | 77                         | 236    |
| <b>CUMULATIVE TOTAL</b> | 766                     | 89                         | 422    |

## 4.5. The figures for chickens at various Livestock Centers are as follows:

| LVSTCK CENTER       | BEGIN MONTH | CHICKS HATCHED | IN | OUT | DIED | MONTH END |
|---------------------|-------------|----------------|----|-----|------|-----------|
| 1. M'puzi           | 32          | 5              | -  | 28  | 3    | 6         |
| 2. Combomune        | 16          | 5              | 6  | 18  | -    | 9         |
| 3. Acordo de Lusaka | 16          | -              | -  | 16  | -    | -         |
| 4. Chinhacanine     | 13          | -              | 38 | 41  | 10   | -         |

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|                         |            |           |           |            |           |            |
|-------------------------|------------|-----------|-----------|------------|-----------|------------|
| 5 Chokwe Transit center | 66         | -         | -         | 56         | 5         | 5          |
| 6 Massangena            | 87         | 2         | -         | 2          | 13        | 74         |
| 7. Ndombe               | 44         | -         | -         | 24         | 8         | 12         |
| 8. Matidze              | 34         | -         | 5         | 24         | 12        | 3          |
| <b>TOTAL</b>            | <b>308</b> | <b>12</b> | <b>49</b> | <b>208</b> | <b>61</b> | <b>109</b> |

## 5. DUCKS:

5.1. The distribution of ducks was carried out as follows:

| DISTRICT<br>Village     | DUCKS<br>DISTRIBUTED | NUMBER OF<br>BENEFICIARIES |            |
|-------------------------|----------------------|----------------------------|------------|
|                         |                      | MALE                       | FEMALE     |
| <b>GUIJA</b>            |                      |                            |            |
| 1 Chinhacanine          | 27                   | -                          | 26         |
| 2. Sifo                 | 8                    | -                          | 8          |
| 3 Ndonga                | 15                   | 1                          | 13         |
|                         | <b>50</b>            | <b>1</b>                   | <b>47</b>  |
| <b>MASSANGENA</b>       |                      |                            |            |
| 1 Mbocoda               | 4                    | 1                          | 1          |
| 2. Ngomane              | 2                    | -                          | 1          |
|                         | <b>6</b>             | <b>1</b>                   | <b>2</b>   |
| <b>CHICUALACUALA</b>    |                      |                            |            |
| 1 Ndombe                | 43                   | 6                          | 17         |
| 2. Mpuzi                | 20                   | -                          | 10         |
|                         | <b>63</b>            | <b>6</b>                   | <b>27</b>  |
| <b>GRAND TOTAL</b>      | <b>119</b>           | <b>8</b>                   | <b>76</b>  |
| <b>PREVIOUS TOTAL</b>   | <b>350</b>           | <b>54</b>                  | <b>168</b> |
| <b>CUMULATIVE TOTAL</b> | <b>509</b>           | <b>62</b>                  | <b>244</b> |

5.2. The figures for ducks at the various livestock centers are as follows:

| LVSTCK CENTER   | BEGIN<br>MONTH | D'INGS<br>HATCHED | IN | OUT | DIED | MONTH<br>END |
|-----------------|----------------|-------------------|----|-----|------|--------------|
| 1 Mpuzi         | 23             | -                 | 2  | 20  | -    | 5            |
| 2. Combomune    | 14             | 5                 | 6  | 15  | 4    | 6            |
| 3. Chinhacanine | 10             | -                 | -  | 7   | 3    | -            |

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|                         |            |          |          |            |           |           |
|-------------------------|------------|----------|----------|------------|-----------|-----------|
| 4 Chokwe Transit Center | 22         | -        | -        | 19         | 1         | 2         |
| 5. Massangena           | 59         | -        | -        | 6          | 4         | 49        |
| 6 Matidze               | 10         | -        | -        | 7          | 3         | -         |
| 7 Ndombe                | 62         | -        | -        | 43         | 5         | 14        |
| 8 Acordo de Lusaka      | 7          | -        | -        | 7          | -         | -         |
| <b>TOTAL</b>            | <b>207</b> | <b>5</b> | <b>8</b> | <b>124</b> | <b>20</b> | <b>76</b> |

**6. GUINEA PIGS:**  
sector this month are as follows:

6.1 Guinea pigs that have been distributed to the family

| DISTRICT      | VILLAGE          | DISTRIBUTED | BENEFICIARIES |        |
|---------------|------------------|-------------|---------------|--------|
|               |                  |             | MALE          | FEMALE |
| MABALANE      | 1 Matidze        | 4           | -             | 2      |
|               | 2. Combomune Rio | 12          | 2             | 4      |
|               |                  | 16          | 2             | 6      |
| GUIJA         | 1 Chinhacanine   | 84          | 20            | 24     |
|               | 2. Acord d Lusak | 69          | -             | 42     |
|               |                  | 153         | 20            | 66     |
| CHICUALACUALA | 1. Mpuzi         | 36          | -             | 18     |
|               | 2. Mapai Ngala   | 6           | -             | 3      |
|               |                  | 42          | -             | 21     |
| GRAND         | TOTAL            | 211         | 22            | 93     |
| PREVIOUS      | TOTAL            | 697         | 151           | 195    |
| CUMULATIVE    | TOTAL            | 908         | 173           | 288    |

6.2. Figures for guinea pigs at WRC livestock centers are as follows:

| LIVESTOCK CENTER    | BEGIN MONTH | BORN | IN | OUT | DIED | MONTH END |
|---------------------|-------------|------|----|-----|------|-----------|
| 1. Mpuzi            | 39          | 3    | 2  | 36  | 8    | -         |
| 2. Combomune        | 14          | 6    | 2  | 12  | 2    | 8         |
| 3. Acordo de Lusaka | 13          | 2    | 13 | 28  | -    | -         |

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|                         |            |           |           |            |           |            |
|-------------------------|------------|-----------|-----------|------------|-----------|------------|
| 4 Chinhacanne           | 29         | -         | -         | 29         | -         | -          |
| 5 Chokwe Transit center | 43         | -         | -         | 42         | 1         | -          |
| 6 Matidze               | 40         | -         | -         | 4          | 8         | 28         |
| 7 Ndombe                | 43         | 8         | -         | -          | 4         | 47         |
| 8 Massangena            | 45         | -         | -         | -          | 10        | 35         |
| <b>TOTAL</b>            | <b>266</b> | <b>19</b> | <b>17</b> | <b>161</b> | <b>33</b> | <b>118</b> |

6.3. Figures of guinea pigs in the hands of the family sector of which the initial stock was distributed by WRC are as follows:

| DISTRICT        | BEGIN MONTH | BORN       | IN         | OUT        | SLT* /DIED | M'TH END    | BENEFICIARIES |            |
|-----------------|-------------|------------|------------|------------|------------|-------------|---------------|------------|
|                 |             |            |            |            |            |             | MALE          | FEM        |
| 1 Guja          | 966         | 97         | 119        | 75         | 43         | 1064        | 56            | 178        |
| 2 Mabalane      | 569         | 80         | 16         | 50         | 46         | 569         | 46            | 63         |
| 3 Chicualacuala | 242         | 38         | 42         | 2          | 3          | 317         | 33            | 62         |
| 4 Massangena    | 160         | -          | -          | -          | -          | 160         | 38            | 8          |
| <b>TOTAL</b>    | <b>1967</b> | <b>195</b> | <b>177</b> | <b>127</b> | <b>92</b>  | <b>2110</b> | <b>173</b>    | <b>311</b> |

\*SLT = Slaughtered

## 7. GOATS:

### 7.1. Distribution of goats.

The distribution of goats was carried out as follows.

| DISTRICT<br>Village  | GOATS<br>DISTRIBUTED | BENEFICIARIES |        | PAYMENT<br>"TAX" Mts |
|----------------------|----------------------|---------------|--------|----------------------|
|                      |                      | MALE          | FEMALE |                      |
| MABALANE<br>1 Zone 9 | 12                   | -             | 6      |                      |
| 2 Matidze            | 27                   | -             | 136    |                      |
| 3 Combomune Rio      | 98                   | 12            | 45     |                      |

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|                     |            |           |            |                   |
|---------------------|------------|-----------|------------|-------------------|
| 4 Nhone             | 8          | 2         | 2          |                   |
| 5 Zone 8            | 23         | -         | 11         |                   |
| 6. Zone 1           | 9          | -         | 3          |                   |
|                     | 177        | 14        | 80         | 12 250 000        |
| CHICUALACUALA       |            |           |            |                   |
| 1 Ndombe            | 42         | 4         | 22         |                   |
| 2 Mpuzi Rio         | 74         | 1         | 36         |                   |
| 3 Matsilele         | 6          | 1         | 3          |                   |
| 4 Mucachane         | 16         | -         | 7          |                   |
|                     | 138        | 6         | 68         | 9 650 000         |
| GUJA                |            |           |            |                   |
| 1 Chinhacanine      | 55         | 13        | 15         |                   |
| 2. Acordos d Lusaka | 44         | 1         | 21         |                   |
|                     | 99         | 14        | 36         | 6 930 000         |
| <b>GRAND TOTAL</b>  | <b>414</b> | <b>34</b> | <b>191</b> | <b>28 840 000</b> |
| PREVIOUS TOTAL      | -          | -         | -          | -                 |
| CUMULATIVE TOTAL    | 414        | 34        | 191        | 28 840 000        |

## 7.2. The deworming of goats and treatment against external parasites was carried out as follows:

| DISTRICT Village      | GOATS TREATED | BENEFICIARIES |        | PAYMENT Mts/ In kind             |
|-----------------------|---------------|---------------|--------|----------------------------------|
|                       |               | MALE          | FEMALE |                                  |
| MABALANE1 Chirhequete | 100           | 1             | -      | 1 goat                           |
| 2. Covele             | 66            | 1             | -      | 30 000                           |
| 3 Tsocate             | 137           | 1             | 2      | 60 000                           |
| 4 Zone 5              | 10            | 1             | -      | 30 000                           |
| 5 Zone 8              | 10            | -             | 1      | 30 000                           |
| 6 Djase               | 130           | 3             | 1      | 3 chickens<br>2 goats<br>15 000  |
| 7 Matsambo            | 40            | 2             | 2      | 15 00                            |
| 8. Makarale           | 140           | 2             | -      | 2 goats                          |
|                       | 633           | 11            | 6      | 180 000<br>3 chickens<br>3 goats |
| CHICUALACUALA         |               |               |        |                                  |
| 1. Panhame            | 114           | 3             | -      | 1 goat<br>1 duck                 |
| 2. Kunguma            | 144           | 3             | 2      | 30 000<br>1 goat                 |

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|                            |             |           |          |   |
|----------------------------|-------------|-----------|----------|---|
|                            |             |           |          | 4 chickens  |
| 3 Chissapa                 | 112         | 5         | -        | 141 000<br>1 goat   |
| 4 Chipamanine              | 63          | -         | 1        | 129 000   |
| 5 Ndombe Live stock Center | 74          | -         | -        | -   |
| 6 Regua                    | 111         | 1         | -        | 1 goat  |
| 7 Chikemane                | 46          | 3         | -        | 3 chickens<br>9 000   |
|                            | 664         | 15        | 3        | 309 000 1 duck<br>4 goats<br>7 chickens                                       |
| MASSANGENA1 Mavue          | 24          | 1         | -        | 15 000  |
|                            | 24          | 1         | -        | 15 000  |
| <b>GRAND TOTAL</b>         | <b>1301</b> | <b>27</b> | <b>9</b> | <b>224 760</b><br><b>3 chickens</b><br><b>10 goats</b><br><b>9 ducks</b>      |
| PREVIOUS TOTAL             | 13197       | 474       | 188      | 17 066 250<br>122 chickens<br>72 goats<br>2 sheep<br>22 ducks<br>44 kg millet |
| CUMULATIVE TOTAL           | 14498       | 501       | 197      | 17 290 000<br>125 chickens<br>82 goats<br>2 sheep<br>31 ducks<br>44 kg millet |

### 7.3. Treatment of goats for internal parasites only :

| DISTRICT<br>Village | GOATS<br>TREATED | BENEFICIARIES |        | PAYMENT<br>Mts/ In kind |
|---------------------|------------------|---------------|--------|-------------------------|
|                     |                  | MALE          | FEMALE |                         |
| TOTAL               | -                | -             | -      | -                       |
| PREVIOUS TOTAL      | 5                | 5             | -      | 7 500                   |
| CUMULATIVE TOTAL    | 5                | 5             | -      | 7 500                   |

7.4 Treatment of goats for mange through immersion into Samadip was done as follows:

| DISTRICT | GOATS |  | PAYMENT |
|----------|-------|--|---------|
|----------|-------|--|---------|

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|                  |     | MALE | FEMALE |                   |
|------------------|-----|------|--------|-------------------|
| MABALANE         |     |      |        |                   |
| 1. Hoyo-hoyo     | 45  | 2    | -      | 75 000            |
| 2. Djaze         | 20  | -    | 1      | -                 |
| TOTAL            | 65  | 2    | 1      | 75 000            |
| PREVIOUS TOTAL   | 101 | 4    | 1      | 57 000<br>1 goat  |
| CUMULATIVE TOTAL | 166 | 6    | 2      | 132 000<br>1 goat |

7.5. Treatment of goats by antibiotics for various ailments was done as follows.

| DISTRICT<br>Village | GOATS<br>TREATED | BENEFICIARIES |        | PAYMENT<br>Mts/ In kind |
|---------------------|------------------|---------------|--------|-------------------------|
|                     |                  | MALE          | FEMALE |                         |
| TOTAL               | -                | -             | -      | -                       |
| PREVIOUS TOTAL      | 21               | 13            | 1      | 166 000                 |
| CUMULATIVE TOTAL    | 21               | 13            | 1      | 166 000                 |

7.6. The treatment of goats for eye infection was done as follows:

| DISTRICT<br>Village | GOATS<br>TREATED | BENEFICIARIES |        | PAYMENT<br>Mts/ In kind |
|---------------------|------------------|---------------|--------|-------------------------|
|                     |                  | MALE          | FEMALE |                         |
| TOTAL               | -                | -             | -      | -                       |
| PREVIOUS TOTAL      | 25               | 14            | 1      | 178 000                 |
| CUMULATIVE TOTAL    | 25               | 14            | 1      | 178 000                 |

7.7. The figures for goats at WRC livestock centers are as follows:

| LVSTCK CENTER           | BEGIN<br>MONTH | BORN | IN | OUT | DIED | MONTH<br>END |
|-------------------------|----------------|------|----|-----|------|--------------|
| 1. Mpuzi                | 104            | 3    | -  | 90  | 6    | 11           |
| 2. Combonune            | 102            | 3    | 4  | 106 | 3    | -            |
| 3. Matidze              | 78             | 7    | -  | 71  | 5    | 9            |
| 4. Acordos de<br>Lusaka | 49             | 1    | -  | 44  | 4    | 2            |

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|               |     |    |   |     |    |    |
|---------------|-----|----|---|-----|----|----|
| 6 Chinhacarne | 55  | 3  | - | 55  | 3  | -  |
|               | 458 | 20 | 6 | 414 | 21 | 48 |

**8. CATTLE:**

8.1. Deworming of cattle and treatment against external parasites was done as follows:

| DISTRICT<br>Village | CATTLE<br>TREATED | BENEFICIARIES |        | PAYMENT<br>Mts/ In kind |
|---------------------|-------------------|---------------|--------|-------------------------|
|                     |                   | MALE          | FEMALE |                         |
| TOTAL               | -                 | -             | -      | -                       |
| PREVIOUS TOTAL      | 32                | -             | 2      | 96 000                  |
| CUMULATIVE<br>TOTAL | 32                | -             | 2      | 96 000                  |

8.2. Treatment of cattle against external parasites only was done as follows:

| DISTRICT<br>Village     | CATTLE<br>TREATED | BENEFICIARIES |        | PAYMENT<br>Mts/ In kind |
|-------------------------|-------------------|---------------|--------|-------------------------|
|                         |                   | MALE          | FEMALE |                         |
| MASSANGENA<br>1 Mbocoda | 3                 | 1             | -      | 9 000                   |
| TOTAL                   | 3                 | 1             | -      | 9 000                   |
| PREVIOUS TOTAL          | 32                | -             | 2      | 96 000                  |
| CUMULATIVE<br>TOTAL     | 35                | 1             | 2      | 105 000                 |

**9. SHEEP:**

The figures for sheep at WRC livestock centers are as follows:

| LVSTCK CENTER | BEGIN<br>MONTH | BORN | IN | OUT | DIED | MONTH<br>END |
|---------------|----------------|------|----|-----|------|--------------|
| 1 Matidze     | 1              | -    | -  | -   | -    | 1            |
|               | 1              | -    | -  | -   | -    | 1            |

**10. RABBITS:**

The number of rabbits at Acordos de Lusaka Livestock Center are as follows:

| BEGIN MONTH | BORN | DIED | MONTH END |
|-------------|------|------|-----------|
| 9           | -    | -    | 9         |



**11. REDISTRIBUTION OF GARLIC SEED:**

The redistribution of garlic seed was done in accordance with the agreement that those who received some garlic seed directly from WRC would pass on some of their seed to others after successfully establishing them. The redistribution was carried out as follows:

| DISTRICT   | VILLAGE | DONORS | BENEFICIARIES |        |
|------------|---------|--------|---------------|--------|
|            |         |        | MALE          | FEMALE |
| TOTAL      |         | -      | -             | -      |
| PREVIOUS   | TOTAL   | 23     | 8             | 32     |
| CUMULATIVE | TOTAL   | 23     | 8             | 32     |

**12. FRUIT-TREE SEEDLINGS:**

Seedlings were distributed as follows.

| DISTRICT                  | MA-NGO | CAS-HEW | AMEND-OEIRAS | PAW-PAW | BENEFICIARIES |     | INCOME (Mts) |
|---------------------------|--------|---------|--------------|---------|---------------|-----|--------------|
|                           |        |         |              |         | MALE          | FEM |              |
| CHICUALACUAL<br>1 Chic'la | -      | -       | -            | 38      | 15            | 23  | 13 000       |
| GRAND TOTAL               | -      | -       | -            | 38      | 15            | 23  | 13 000       |
| PREVIOUS TOTAL            | 631    | 445     | 26           | 159     | 227           | 157 | 1097 990     |
| CUMULATIVE TOTAL          | 631    | 445     | 26           | 197     | 242           | 180 | 1110 990     |

**13. SALE OF BAMBARA GROUNDNUT SEED (JUGO BEANS).**

World Relief bought seed of Bambara Groundnut and sold it to the family sector at a lower price of 15 000 - 16 000 Mts per Kg.

The figures of the sales were as follows:

| DISTRICT<br>Village | KG SEED<br>SOLD | BENEFICIARIES |        | INCOME<br>(Mts) |
|---------------------|-----------------|---------------|--------|-----------------|
|                     |                 | MALE          | FEMALE |                 |
| GRAND TOTAL         | -               | -             | -      | -               |
| PREVIOUS TOTAL      | 50,75           | 26            | 83     | 743 000         |
| CUMULATIVE TOTAL    | 50,75           | 26            | 83     | 743 000         |

**14. DISTRIBUTION OF COOL SEASON VEGETABLE SEED:**

The seed was distributed free of charge to households who have access to irrigation water at the river basins or similar places.

The allotment for each recipient was as follows:

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The distribution was done as follows:

| DISTRICT   | VILLAGE | BENEFICIARIES |        |
|------------|---------|---------------|--------|
|            |         | MALE          | FEMALE |
| GRAND      | TOTAL   | -             | -      |
| PREVIOUS   | TOTAL   | 1606          | 4495   |
| CUMULATIVE | TOTAL   | 1606          | 4495   |

#### 15. REDISTRIBUTION OF SWEET POTATO VINES:

The redistribution of sweet potato vines was done in accordance with the agreement that those who received sweet potato vines directly from WRC would pass on some of their vines to others after successfully establishing them.

The redistribution was carried out as follows:

| DISTRICT       | VILLAGE   | DONORS | BENEFICIARIES |        |
|----------------|-----------|--------|---------------|--------|
|                |           |        | MALE          | FEMALE |
| CHICUALACUALA  | 1. Bulela | 1      | -             | 26     |
| TOTAL          |           | -      | -             | -      |
| PREVIOUS TOTAL |           | 98     | 49            | 179    |
| CUMULATIVE TOT |           | 99     | 49            | 179    |

#### 16. MARULA JAM MAKING DEMONSTRATIONS:

Demonstrations on how to make marula jam were held as follows:

| DISTRICT   | VILLAGE | PARTICIPANTS |        |
|------------|---------|--------------|--------|
|            |         | MALE         | FEMALE |
|            | TOTAL   | -            | -      |
| PREVIOUS   | TOTAL   | -            | 68     |
| CUMULATIVE | TOTAL   | -            | 68     |

Pumpkin seed was bought by World Relief and sold to the family sector at cost.  
The sales were done as follows

| DISTRICT<br>Village | SEED SOLD<br>(Grams) | BENEFICIARIES |        | INCOME<br>(Mts) |
|---------------------|----------------------|---------------|--------|-----------------|
|                     |                      | MALE          | FEMALE |                 |
| TOTAL               |                      | -             | -      | -               |
| PREVIOUS TOTAL      | 300                  | -             | 21     | 66 000          |
| CUMULATIVE TOT      | 300                  | -             | 21     | 66 000          |

#### 18. PROTECTION OF GRANARIES AGAINST RATS:

Granary protection was carried out as follows:

| DISTRICT   | VILLAGE | GRANARIES<br>PROTECTED | BENEFICIARIES |        |
|------------|---------|------------------------|---------------|--------|
|            |         |                        | MALE          | FEMALE |
| TOTAL      |         | -                      | -             | -      |
| PREVIOUS   | TOTAL   | 1283                   | 909           | 255    |
| CUMULATIVE | TOTAL   | 1283                   | 909           | 255    |

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**19. EXTENSION ORGANIZATIONS AND ACTIVITIES:****19.1. Guija District:**

|                            | F<br>R<br>S<br>U<br>E<br>I<br>E<br>T<br>D<br>L<br>T<br>I<br>R<br>N<br>E<br>G<br>E<br>S | C<br>H<br>I<br>C<br>K<br>E<br>N<br>S | D<br>U<br>C<br>K<br>S | G<br>O<br>A<br>T<br>S | V<br>E<br>G<br>E<br>T<br>A<br>B<br>L<br>E<br>S | G<br>U<br>I<br>N<br>E<br>A<br>P<br>I<br>G<br>S |
|----------------------------|--|--------------------------------------|-----------------------|-----------------------|--|--|
| 1 IGs* Formed              | 5  | 11                                   | 5                     | 9                     | 5  | -  |
| 2. Number of members       | 15   | 34                                   | 16                    | 12                    | 10   | -  |
| 3. Total number of IGs*    | 10   | 18                                   | 10                    | 11                    | 9  | 6  |
| 4 Total membership of IGs* | 41   | 80                                   | 42                    | 28                    | 36   | 44   |
| 5 IGs* meetings            | 5  | 9                                    | 4                     | 7                     | 5  | -  |
| 6. Attendance              | 44   | 82                                   | 44                    | 57                    | 29   | -  |
| 7 IGs Committee meetings   | 8  | 8                                    | 3                     | 10                    | 5  | -  |
| 8. Attendance              | 10   | 55                                   | 33                    | 77                    | 32   | -  |
| 9 Personal visits          | 7  | 8                                    | 4                     | 10                    | 4  | -  |
| 10. Demonstrations         | 3  | 8                                    | 4                     | 10                    | 4  | -  |
| 11 Attendance              | 34   | 84                                   | 31                    | 69                    | 46   | -  |

\* Interest Groups

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**19.2. Mabalane District:**

|                            | F<br>R<br>S<br>U<br>E<br>I<br>E<br>T<br>D<br>L<br>T<br>I<br>R<br>N<br>E<br>G<br>E<br>S | C<br>H<br>I<br>C<br>K<br>E<br>N<br>S | D<br>U<br>C<br>K<br>S | G<br>O<br>A<br>T<br>S | V<br>E<br>G<br>E<br>T<br>A<br>B<br>L<br>E<br>S | G<br>U<br>I<br>N<br>E<br>A<br>P<br>I<br>G<br>S |
|----------------------------|--|--------------------------------------|-----------------------|-----------------------|--|--|
| 1 IGs* Formed              | 3  | 10                                   | 2                     | 2                     | 3  | -  |
| 2. Number of members       | 4  | 28                                   | 5                     | 12                    | 17   | -  |
| 3 Total number of IGs*     | 12   | 28                                   | 19                    | 11                    | 16   | 13   |
| 4 Total membership of IGs* | 31   | 176                                  | 116                   | 96                    | 162  | 149  |
| 5 IGs* meetings            | 2  | 4                                    | 2                     | 5                     | 6  | -  |
| 6 Attendance               | 8  | 17                                   | 8                     | 16                    | 13   | -  |
| 7 IGs Committee meetings   | 2  | 3                                    | 2                     | 4                     | 2  | -  |
| 8 Attendance               | 4  | 15                                   | 5                     | 25                    | 8  | -  |
| 9 Personal visits          | 3  | 4                                    | 2                     | 8                     | 10   | 4  |
| 10. Demonstrations         | 3  | 2                                    | 3                     | 3                     | 1  | -  |
| 11 Attendance              | 3  | 16                                   | 9                     | 53                    | 13   | -  |

\* Interest Groups

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**19.3. Chicualacuala District:**

|                            | F<br>R<br>S<br>U<br>E<br>I<br>E<br>T<br>D<br>L<br>T<br>I<br>R<br>N<br>E<br>G<br>E<br>S | C<br>H<br>I<br>C<br>K<br>E<br>N<br>S | D<br>U<br>C<br>K<br>S | G<br>O<br>A<br>T<br>S | V<br>E<br>G<br>E<br>T<br>A<br>B<br>L<br>E<br>S | G<br>U<br>I<br>N<br>E<br>A<br>P<br>I<br>G<br>S |
|----------------------------|--|--------------------------------------|-----------------------|-----------------------|--|--|
| 1 IGs* Formed              | 1  | 1                                    | 2                     | 2                     | 3  | -  |
| 2. Number of members       | 38   | 13                                   | 23                    | 31                    | 36   | -  |
| 3. Total number of IGs*    | 14   | 14                                   | 14                    | 10                    | 31   | 9  |
| 4 Total membership of IGs* | 195  | 136                                  | 127                   | 197                   | 389  | 76   |
| 5 IGs* meetings            | -  | 1                                    | 2                     | 2                     | 4  | -  |
| 6 Attendance               | -  | 13                                   | 23                    | 31                    | 14   | -  |
| 7 IGs Committee meetings   | -  | -                                    | -                     | 1                     | 3  | -  |
| 8 Attendance               | -  | -                                    | -                     | 8                     | 14   | -  |
| 9 Personal visits          | -  | -                                    | -                     | -                     | 7  | -  |
| 10 Demonstrations          | -  | -                                    | -                     | -                     | 5  | -  |
| 11. Attendance             | -  | -                                    | -                     | -                     | 14   | -  |

\* Interest Groups

**19.4. Massangena District:**

|                            | F<br>R<br>S<br>U<br>E<br>I<br>E<br>T<br>D<br>L<br>T<br>I<br>R<br>N<br>E<br>G<br>E<br>S | C<br>H<br>I<br>C<br>K<br>E<br>N<br>S | D<br>U<br>C<br>K<br>S | G<br>O<br>A<br>T<br>S | V<br>E<br>G<br>E<br>T<br>A<br>B<br>L<br>E<br>S | G<br>U<br>I<br>N<br>E<br>A<br>P<br>I<br>G<br>S |
|----------------------------|--|--------------------------------------|-----------------------|-----------------------|--|--|
| 1 IGs* Formed              | 1  | 1                                    | 1                     | -                     | -  | 2  |
| 2. Number of members       | 6  | 5                                    | 12                    | -                     | -  | 7  |
| 3. Total number of IGs*    | 6  | 8                                    | 10                    | -                     | 2  | 13   |
| 4 Total membership of IGs* | 27   | 14                                   | 29                    | -                     | 8  | 77   |
| 5 IGs* meetings            | -  | 1                                    | 1                     | 3                     | -  | -  |
| 6 Attendance               | -  | 3                                    | 7                     | 50                    | -  | -  |
| 7 IGs Committee meetings   | -  | -                                    | -                     | -                     | -  | -  |
| 8 Attendance               | -  | -                                    | -                     | -                     | -  | -  |
| 9 Personal visits          | -  | -                                    | -                     | -                     | -  | 4  |
| 10. Demonstrations         | -  | -                                    | -                     | -                     | -  | -  |
| 11. Attendance             | -  | -                                    | -                     | -                     | -  | -  |

\* Interest Groups

**20. PLANS FOR THE MONTH OF AUGUST:**

20.1 To continue with campaigns for treatment of goats against internal and external parasites.

20.2 To continue with vaccinations of chickens against Newcastle Disease.

20.3. Evaluation of the Agricultural Programme.

8 Aug. '97.

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## Appendix H. Secondary Data Consulted



## Appendix I. Financial Status Summary

**FINANCIAL STATUS ON U.S.A.I.D. GRANT 656-0217-G-SS-3003  
FOR THE PERIOD ENDING JUNE 1997**

**Org. Name: WORLD RELIEF CORPORATION : MOZAMBIQUE**  
**Grant Name: MOZAMBIQUE AG. & WATER**  
**Grant Number: 656-0217-G-SS-3003**

**Grant Begin Date: 16 OCTOBER 1992**  
**Grant End Date: 30 SEPTEMBER 1997**  
**% TIME ELAPSED: 95%**

| Cost Element (Line Items)  | (B)<br>Approved<br>Budget<br>US\$ | (C) (D)<br>EXPENDITURES                |                         | (E)                                    |  | % Budget                            |  |
|----------------------------|-----------------------------------|--|-------------------------|--|--|-------------------------------------|--|
|                            |                                   | Cummulative to<br>Last Quarter<br>US\$ | Current Quarter<br>US\$ | Total to Date<br>To 30 June 97<br>US\$ | Expected<br>To 30 September 97<br>US\$ | Expended<br>(Col E/B)<br>To 30 June | % of<br>Budget<br>Expected<br>to<br>Expend |
| 1. Personnel               | 639,266                           | 489,084                                | 40,563                  | 529,647                                | 589,098                                | 82.85%                              | 92.15%                                     |
| 2. Other Direct Costs      | 79,365                            | 66,393                                 | 3,927                   | 70,320                                 | 89,247                                 | 88.60%                              | 112.45%                                    |
| 3. Equipment and Supplies  | 639,020                           | 476,528                                | 2,352                   | 478,880                                | 538,130                                | 74.94%                              | 84.21%                                     |
| 4. Travel & Transportation | 189,000                           | 128,514                                | 7,108                   | 135,622                                | 185,322                                | 71.76%                              | 98.05%                                     |
| 5. Subcontract Drilling    | 851,636                           | 818,784                                | -                       | 818,784                                | 818,784                                | 96.14%                              | 96.14%                                     |
| 6. Indirect Costs          | 667,828                           | 478,566                                | 13,487                  | 492,053                                | 555,145                                | 73.68%                              | 83.13%                                     |
| <b>Totals</b>              | <b>3,066,115</b>                  | <b>2,457,869</b>                       | <b>67,437</b>           | <b>2,525,306</b>                       | <b>2,775,725</b>                       | <b>82.36%</b>                       | <b>90.53%</b>                              |